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GREAT PACKAGING DISCOVERIES: *Heat-transfer printing—p. 124*

Background, p. 39 | *Sounding Board, p. 69* | *Ideas in Action, p. 112*

SEPTEMBER 1960

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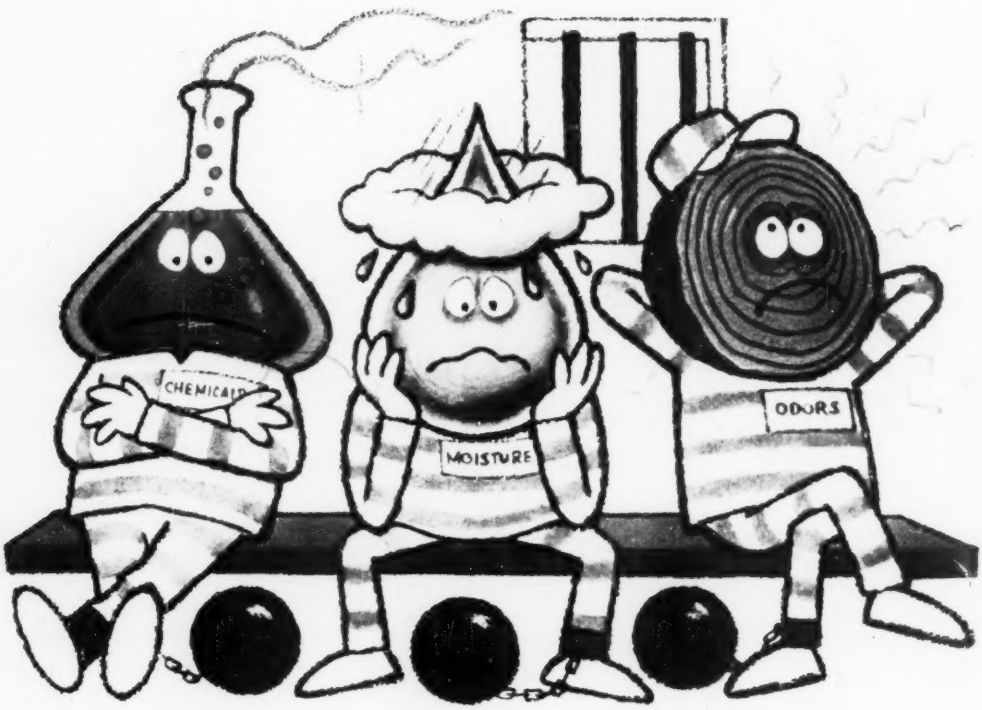

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GOODYEAR

Vitafilm, a Polyvinyl chloride—T. M. The Goodyear Tire & Rubber Company, Akron, Ohio

September 1960 VOL. 38 NO. 1

IN THIS ISSUE

101 **The trend to trays**
Even as packagers of supermarket products adapt conventional shipping cartons to retailer demands for convenient tray stocking, there comes news of a revolutionary new tray shipper that sacrifices considerable corrugated in favor of paper overwraps. This tray-plus-overwrap idea, being tested by several big food brands, signifies a drastic modification of traditional shipping practices. Here is a timely report on the significance of tray stocking to packagers, to retailers and to package suppliers.
General interest.

106 **Cleaning up a backlog**
Typical of many growth companies, Dow Corning two years ago found itself with a clutter of unrelated package designs for hundreds of silicone products. But now the company is bringing organization out of chaos by applying family unity to its product-packaging graphics. Focal point for all new packaging is the company's familiar "free-form" logotype.
Special interest: designers, sales managers.

109 **Light-protective glass**
Packagers in several fields suddenly are showing interest in new color tints of glass that will block ultra-violet rays. At least five container suppliers have added a new ultra-violet-screening emerald-green shade to their lines. Indications are that the demand for light-protective colored glass is definitely on the rise.
Special interest: foods, drugs, beverages.

114 **Pleated shipper**

A cost-cutting step forward in shipping-carton simplification is taken by Helene Curtis. To package a line of hair dryers, the company has devised a box-forming machine to handle a new, bellows-like corrugated container that adjusts to product size. Results: a 10% reduction in materials costs, a 67% cut in manhours.
A production-methods article.

117 **Drawing the quality line**
Sears aims at two objectives in a package-redesign program for a line of women's hosiery —to counteract supermarket gains in hosiery sales and to strengthen its own position as a fashion-goods merchandiser. In addition to new packages and self-selection display units, the change-over includes mechanical advances in imprinting and package closing and sealing.
Special interest: self-selection packagers.

122 **Low-cost polystyrene jar**
The trend toward improved manufacturing and design techniques that have steadily reduced the weight and cost of rigid plastic containers is illustrated in the experience of Keystone Laboratories. In four stages, the company has progressed to a new thin-wall, injection-molded polystyrene jar for hair dressing that uses 37% less material than the first plastic jar.
Special interest: foods, drugs, toiletries.

124 **Heat-transfer printing**
A *Great Packaging Discovery*. Five years ago, Dennison Mfg. Co. introduced a process for transferring a printed coating from a roll of paper backing to a sheet of cellophane. Today, this process of printing by heat transfer is used to decorate millions of plastic bottles. What's more, progress is being made toward

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"The importance of being persuasive."

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adapting the technique to glass containers as well as to regular printed cartons.
General interest.

128 **Hard-working graphics**
Well worth study by any company preparing to launch an unusual new product is a coordinated packaging/merchandising program with which Fairchild introduces a new home-movie camera with synchronized sound. A graphic symbol dramatizes the "sight-and-sound" feature on packaging that suggests high product quality.
Special interest: designers, product managers.

131 **Margarine in PVC**

From overseas comes news of a significant volume application of the techniques of thermoforming by Europe's largest margarine packer. On thermoforming, filling and sealing machinery engineered and built by Unilever, hermetically sealed peel-open PVC cups come off the line at the rate of 40 per minute. An unusual rotary filling machine gangs cups to speed filling.
A production-methods article.

136 **The new Cooper's**
Faced with the requirements of the new Federal textile-labeling law, the maker of Jockey brand men's furnishings elects to adopt a colorful new line of packages rather than try to fit the law's provisions into its former design. The move may set a precedent for other textile producers and should interest other packagers as legislatures enact stiffer label laws.
Special interest: soft goods, foods, drugs.

140 **Cone top for pies**
Packagers of products susceptible to damage in container handling will be interested in a colorful foil pan adopted by Rich Pie Co. to protect fragile chiffon-type pies. The sturdy pan has a conical, flat-topped lid, to permit stacking in refrigerated cabinets.
Special interest: baked goods, frozen foods.

TECHNICAL & ENGINEERING

143 **Improved single-structure carton**
Wanted: a low-cost, single-structure carton that eliminates inner liners and outer wraps. Here is a report on a carton that may fill the bill. Its secret: pliable-adhesive edge "calking" combined with special seal-end construction. *By R. J. Hickin and J. J. Higgins.*

148 **Investigation of cushioning materials**
Important to all packagers whose products require cushion protection is a research and development program now under way at Picatinny Arsenal. Its aims are evaluation of cushioning materials to achieve maximum product protection at minimum cube and cost. *By Mario E. Gigliotti.*

153 **Test for polyethylene printability**
Du Pont develops a fast, accurate and simple method for measuring the degree of treatment on film surfaces. An inclining platform measures angles at which drops of water slide from the film. The angles correlate with printability of the surfaces. *By T. F. McLaughlin, Jr.*

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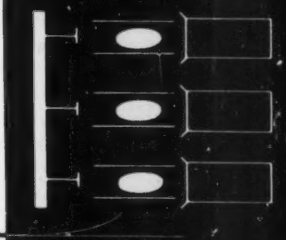
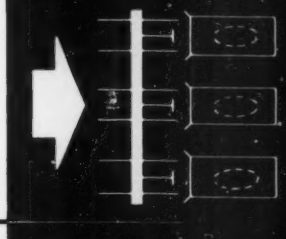
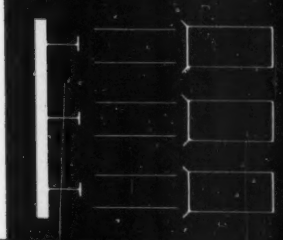
1. Operator places articles in each of 3 troughs.



2. Operator pushes loading handle, filling cartons.



3. Operator returns loading handle to original position and 3 more cartons cycle into loading stations.



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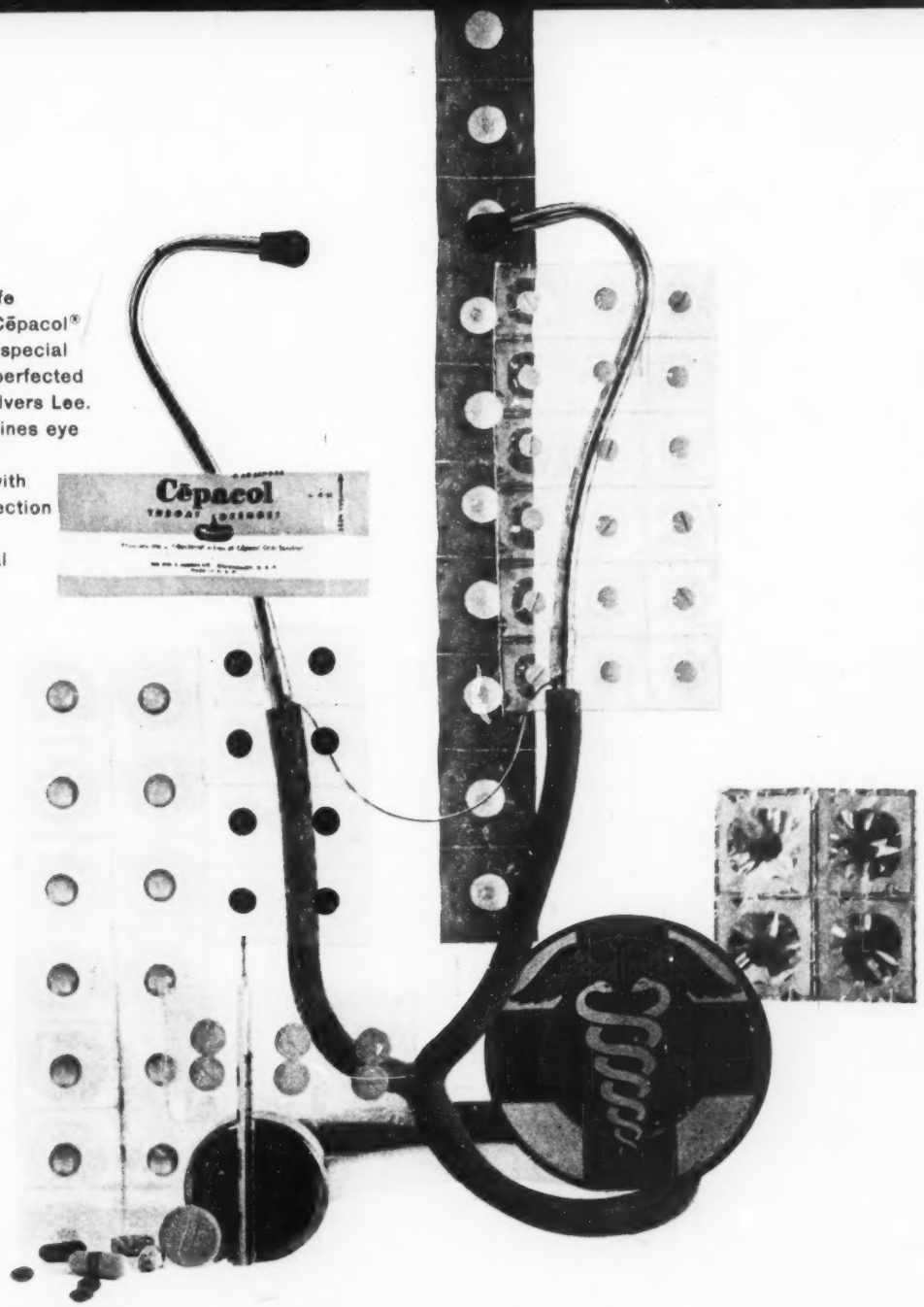

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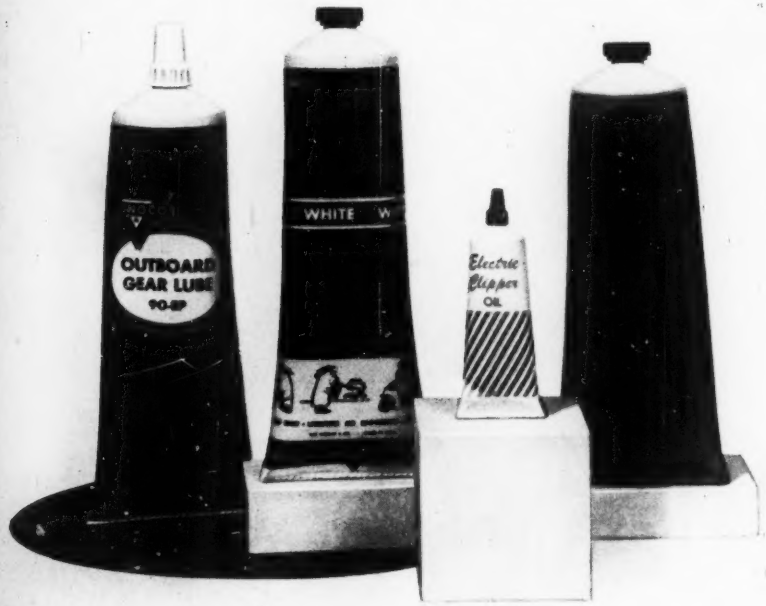

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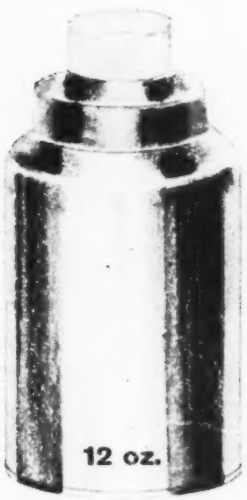

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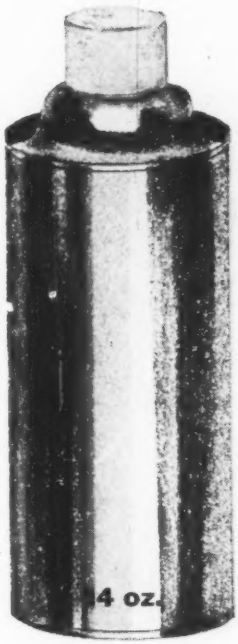

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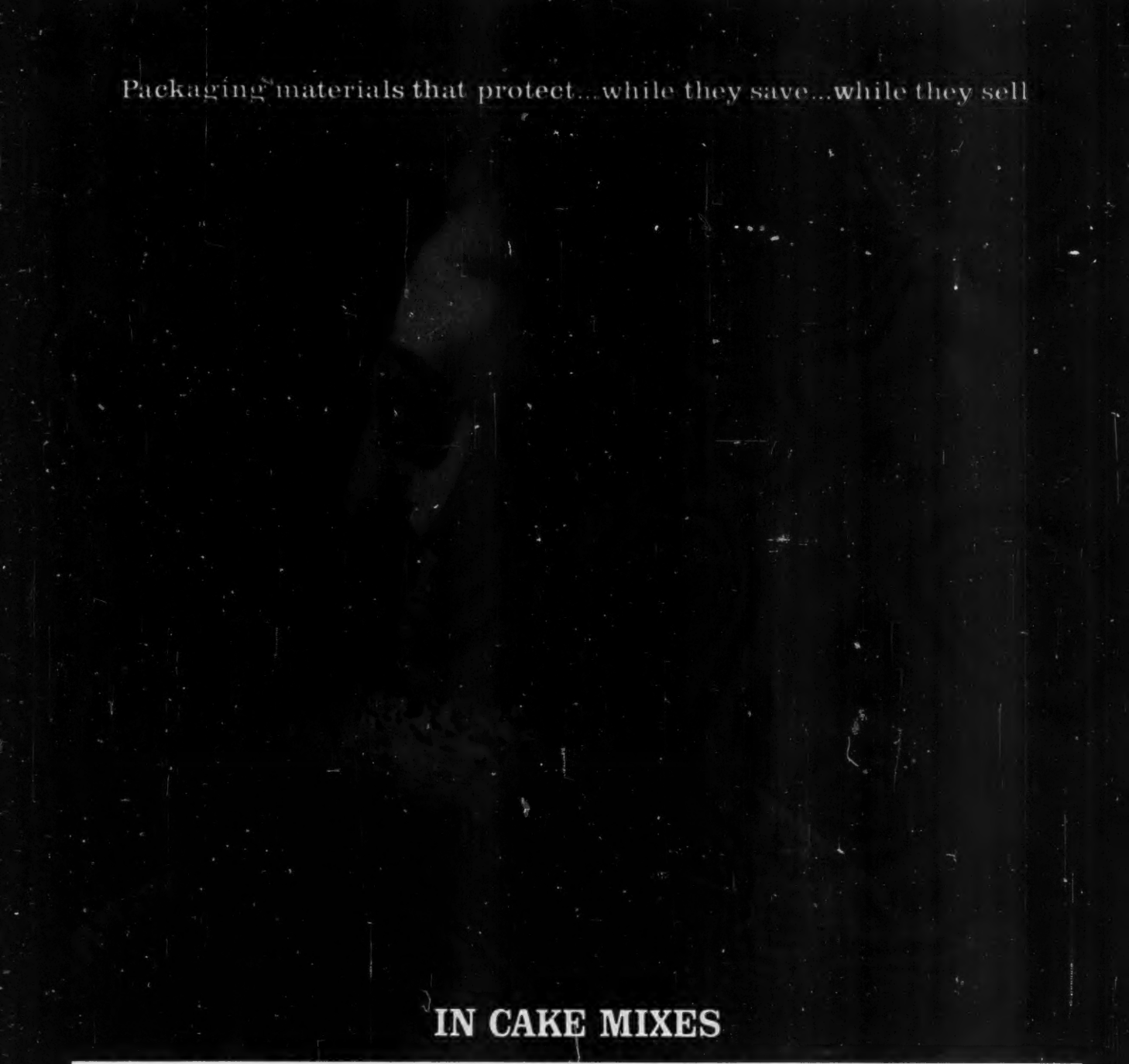

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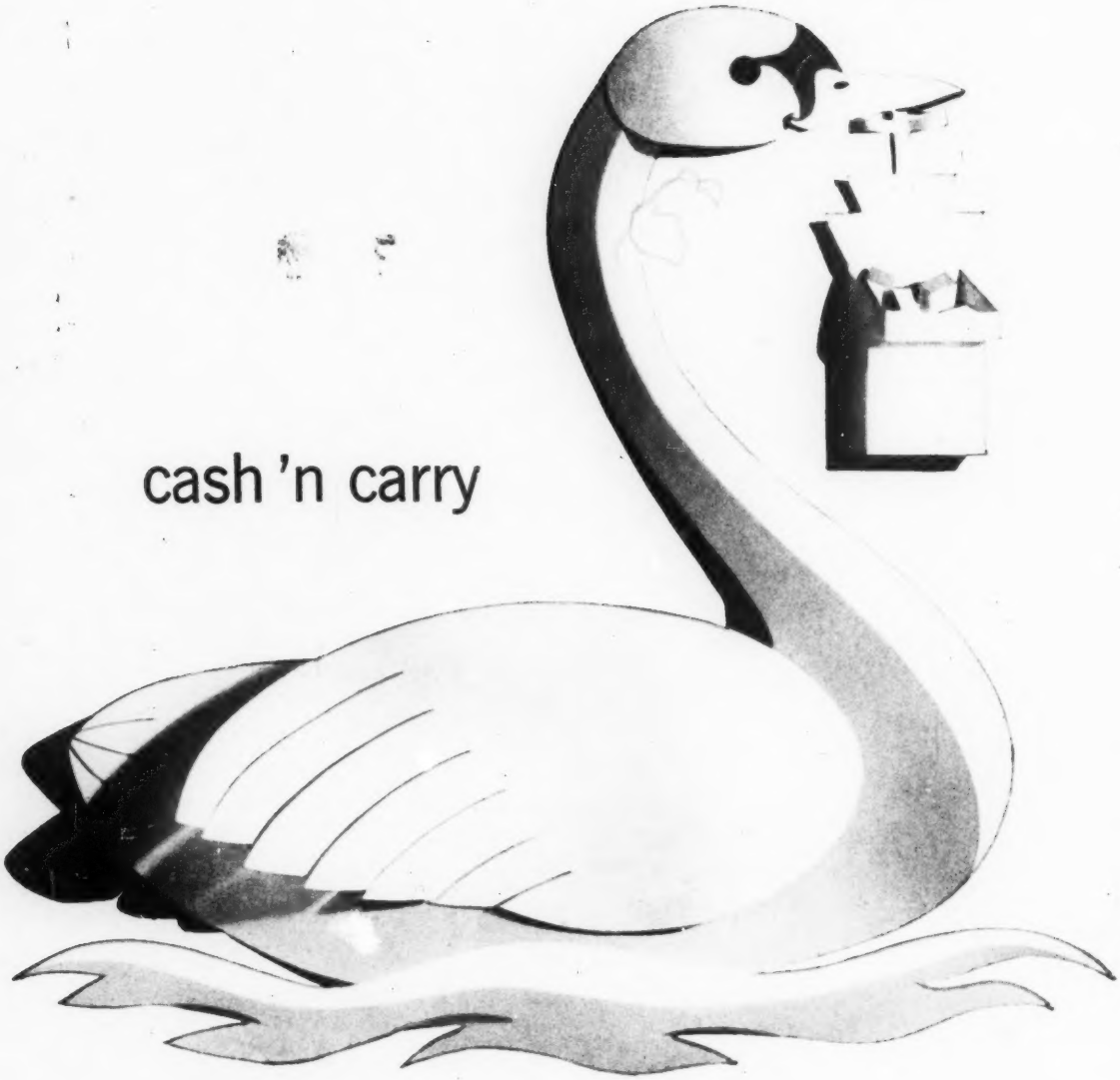

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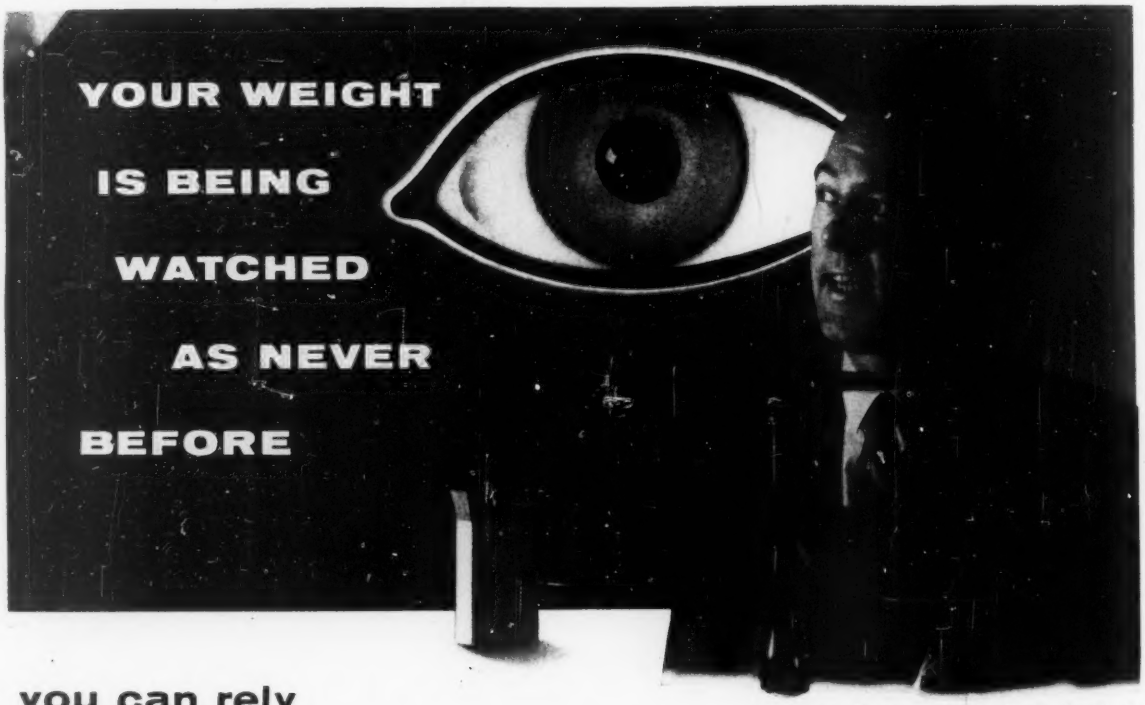

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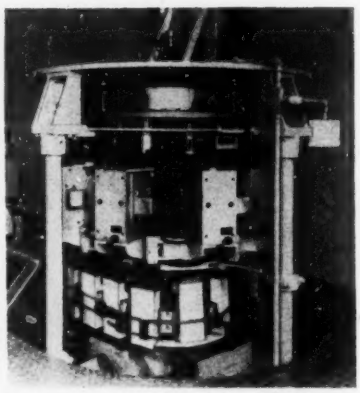

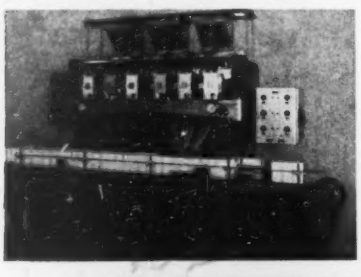

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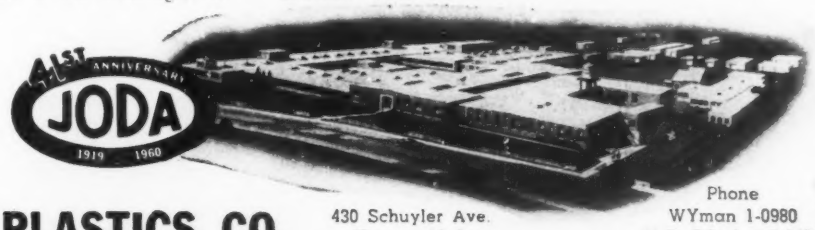
REYNOLDS ALUMINUM

Acetate Sheeting...

by **JOSEPH DAVIS PLASTICS CO.** gives extra "sell" to any packaging because it lends an air of clean freshness to the product and allows the prospective buyer to see it better. The package shown, fabricated by **Show-Pak**, for Woodhill Chemical Co., Cleveland, Ohio, using JODA crystal clear acetate, is an excellent example. It not only shows off the product to best advantage, but protects it from shelf, handling and shipping wear as well.

JODA extruded acetate sheets, rolls and film in all gauges — transparent, translucent or opaque — are excellent for vacuum forming. Why not investigate the advantages of JODA acetate and see for yourself how it can help solve your packaging problems? Write for Brochure M.

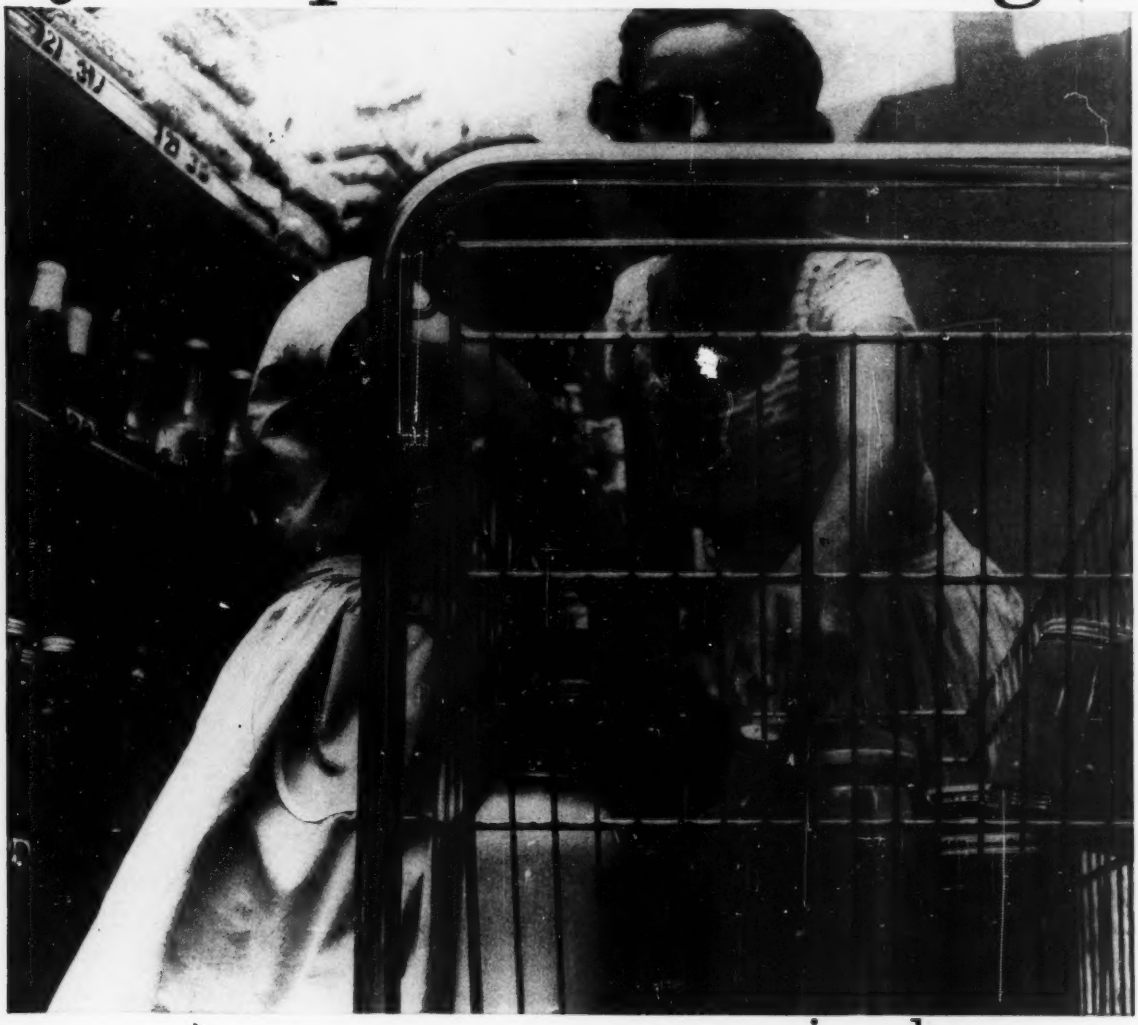


JOSEPH DAVIS PLASTICS CO.

430 Schuyler Ave.
Kearny, N. J.

Phone
WYman 1-0980
N Y BArclay 7-6421

your product belongs



in glass by Brockway

Before your product is "in the bag" . . . it has to be in the basket . . . and between the shopping basket and the grocer's shelf, there is the matter of consumer acceptance. • Your product can have that consumer acceptance when it is packaged in an attractive glass container by Brockway. • At the point of sale only glass can do this job so well . . . only glass presents your product for quick appraisal and approval. • A product that is worthy of consumer acceptance deserves a quality glass container by Brockway.

SYMBOL OF QUALITY · GLASS CONTAINERS

BROCKWAY GLASS

COMPANY, INC., Brockway, Pennsylvania

Sales Offices in Principal Cities

SUBSIDIARIES: Demuth Glass Works, Inc., Parkersburg, W Va.

Tygart Valley Glass Co., Washington, Pa.

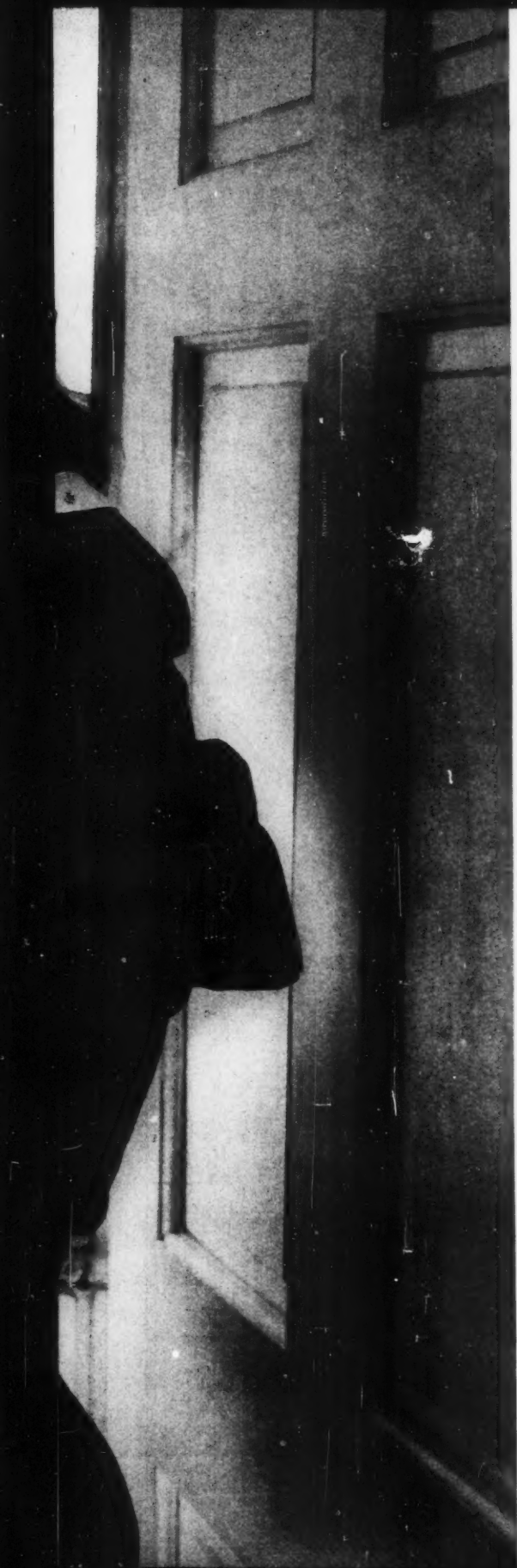
WITH POLY PACKAGES PRINTED IN COLOR PROCESS BY CELLU-CRAFT

Kraft's miniature marshmallows get king-size reaction from shoppers, with appetizing recipes printed in economical process color Flexography. Cellu-Craft's delivery of crisp, impact-loaded halftones is enhanced by complete control of every step, as film flows through the most modern facilities... including Art, Plate-making, Printing, Laminating, Extrusion Coating, and further Converting. You can mold a better consumer image for your product, too, by calling on Cellu-*Craftsmanship* to deliver bright, compelling packages. Write or call today.

HANDLED WITH CARE!

CELLU-CRAFT
PRODUCTS CORPORATION

General Offices & Plant: 1401 4th Ave., New Hyde Park, New York, PRimrose 5-8000. *Sales Offices in principal cities.*
DESIGNING of flexible packages. PRINTING: Glolux® Gravure, Process, Line & Tone Flexography on Cellophane, Polyethylene, Glassine, Extrusion Coatings, Laminations, Foil, Acetate, Pliofilm. CONVERTING: Rolls, Sheets, Bags, Pouches, Envelopes.



Your challenge of the EXCITING 60's

—50% MORE NEWLYWEDS!

LET ANCHOR HOCKING GLASS PACKAGE ENGINEERING HELP YOU GET YOUR SHARE OF THIS GREAT NEW MARKET OF THE 60's!

Forecasts show during the 1960's there will be 50% more people in the "young married" age group. Result: more new households, more new markets for your products.

To help you capture a bigger share of these markets, and to make the best use of Anchorglass® containers and Anchor® closures, we offer you the services of our engineering facilities.

Not only does Anchor Hocking's Engineering Division design and develop glass containers, closures and sealing machines—it constantly strives to improve existing types. It tests, checks, controls and supervises all manufacturing processes to provide products of uniform, high quality. It also is available to help you in mechanizing your packaging lines for high speed production, increased efficiency and labor savings. And field engineering service is always conveniently available through all Anchor Hocking branch offices to help you maintain efficient packaging operations. Anchor Hocking Glass Corporation, Lancaster, Ohio—bringing you the extra values of *specialization* in glass packaging.

ANCHOR HOCKING

Get set for the exciting 60's with Anchorglass Packaging—put an Anchor Man on your team

MODERN MERCHANDISING calls for Modern Moistureless, Self-Sticking kleen-stik® Pressure-Sensitive LABELS

For Every Labeling Need

- Descriptive Labels • Nameplates
- Price Labels • Guarantees
- Warning Labels • Trademarks
- Instruction Labels • Wiring Diagrams

Looking for the proved way to attract, inform, and convince shoppers at the point of sale? Use Kleen-Stik—the versatile, economical labels that apply quickly and easily . . . stick tight on any product or package . . . yet remove easily when desired.

Kleen-Stik solves the most difficult labeling problems—even on hard-to-label surfaces such as glass, metal, wood, ceramic, plastic, and plastic films. Easy to print by any standard process . . . any number of colors. Kleen-Stik Labels can be produced as single split-back units, or in rolls for low-cost automatic dispensing—the world's fastest, most economical labeling method!

Choose from a Wide Range of KLEEN-STIK Label Stocks

- Kromekote • Fluorescent
- Clear Acetate • Foils
- Litho • Metallized Mylar
- . . . and many more

Only KLEEN-STIK Gives You These Self-Sticking Label Advantages:

• NEEDS NO WATER, glue, heat, or chemicals • STICKS TIGHT on any surface—won't pop off or pucker • EASY TO APPLY—just peel backing and press in place • CHOICE OF removable or permanent adhesive

kleen-stik®
PRODUCTS, INC.

7300 W. Wilson Ave. • Chicago 31, Ill.
Plants in Chicago, Newark, Los Angeles, and Toronto, Canada

For that next label job, investigate the benefits of Kleen-Stik—write today for samples and full information.

OVER 25 YEARS OF PRESSURE-SENSITIVE LEADERSHIP!

METRO IS FOR *a dog's best friend*

That's service—and we ought to know because at Metro service is the **big** specialty. Great brand names benefit from Metro's fast thinking and fast moving facilities. Many quality-geared companies demand good sense, good service and the kind of loyal follow through that minimizes the complexity of packaging – and makes the most of the right product in the right glass container . . . whether stock or private mold. There's nothing nicer than a service that caters to your needs – there's nothing finer than ***Metromatic!***

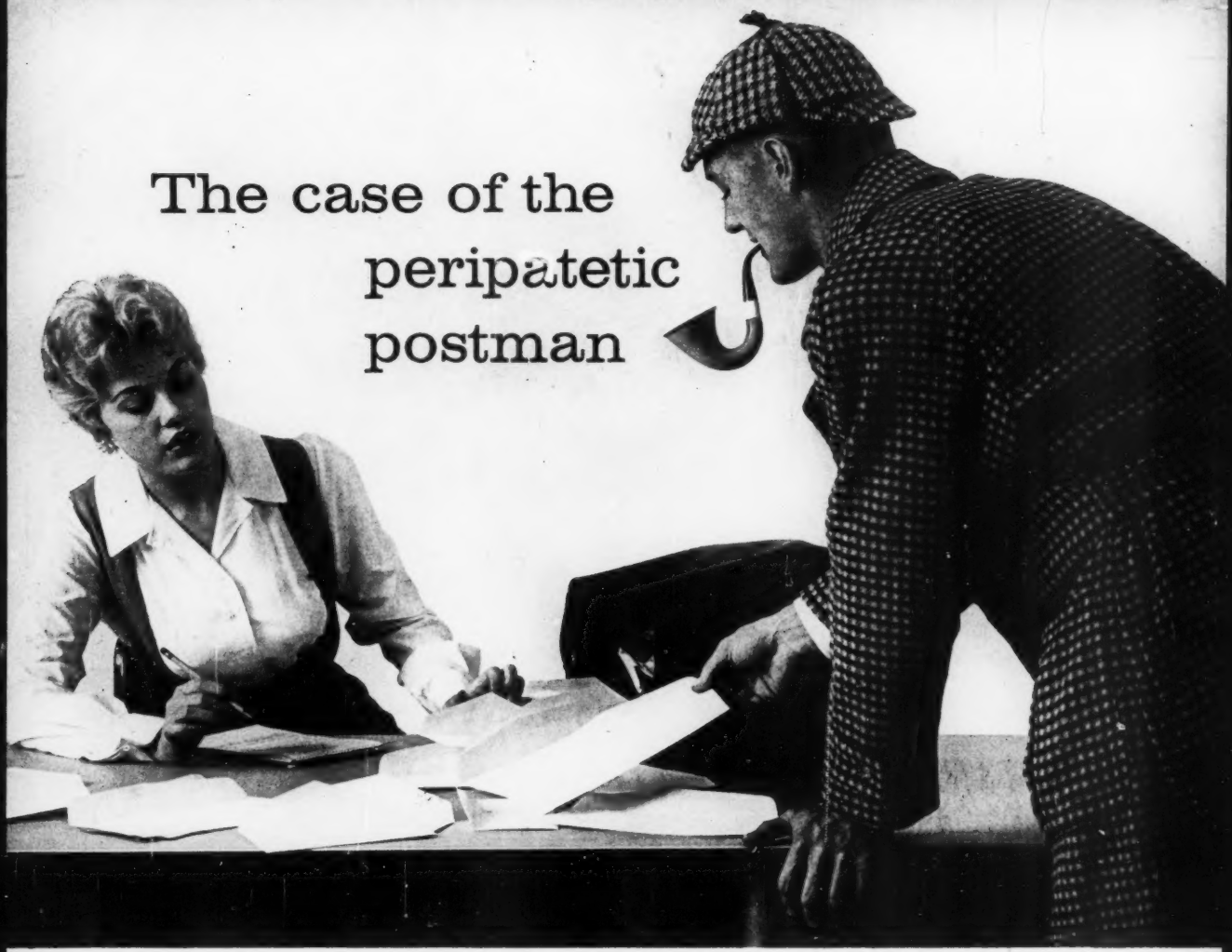
MANUFACTURERS OF QUALITY GLASS CONTAINERS

METRO GLASS

DIVISION NATIONAL DAIRY PRODUCTS CORPORATION

GENERAL OFFICES: JERSEY CITY 3, NEW JERSEY

The case of the peripatetic postman



FEARLESS FULLER: Have you ever played postoffice, Miss Watson?

MISS WATSON: Why, Fearless, I practically invented the game.

FEARLESS FULLER: Well, I'm not referring to games. I'm talking about a postal problem concerning envelopes.

MISS WATSON: Tell me all, Fearless.

FEARLESS FULLER: Well, yesterday I encountered a sad mailman picking up empty envelopes in the street.

MISS WATSON: What happened?

FEARLESS FULLER: It seems a large quantity of letters from the Widget Manufacturing Company came apart in the mail.

MISS WATSON: How come?

FEARLESS FULLER: Well, the adhesive used on the front seal of the envelopes wasn't Fuller's, and it gave way and all the envelopes popped open.

MISS WATSON: You mean the letters fell out of the envelopes?

FEARLESS FULLER: That's right. It was a real mess.

MISS WATSON: How did you solve the problem, Fearless?

FEARLESS FULLER: Well, I recommended that the envelope manufacturer switch to Fuller's #1515 adhesive as a front seal.

MISS WATSON: Fuller's #1515?

FEARLESS FULLER: Yes, It's the ideal envelope gum. It seals perfectly, has high gloss and good lay-flat qualities, machines cleanly and won't block or check. Now the manufacturer has no more envelope problems.

MISS WATSON: Why, I'll bet #1515 even tastes good.

FEARLESS FULLER: As a matter of fact it's odorless and tasteless.

MISS WATSON: You're the greatest, Fearless.

FEARLESS FULLER: Elementary, my dear Miss Watson. Neither rain nor snow nor dark of night can deter a Fuller man from finding the correct solution to adhesive problems.

Your Fuller man is ready with the correct solutions on any adhesive problems for you, too. Contact your near by plant.

H.B. Fuller Co.

INDUSTRIAL ADHESIVES

St. Paul, Minnesota

St. Paul, Minn. • Atlanta, Ga. • Buffalo, N.Y. • Chicago, Ill. • Cincinnati, Ohio
Dallas, Tex. • Kansas City, Mo. • Linden, N.J. • Los Angeles, Calif. • Memphis, Tenn. • Portland, Ore. • So. San Francisco, Calif. • Tampa, Fla.
Also Winnipeg, Can. • Fuller Adhesives International, Nassau, Bahamas

BARTELT

packaging machinery is on the job for...

Lawry's

The flavor and aroma of the world's finest spices are blended in Lawry's popular mix products . . . and delivered to the consumer's kitchen in these attractive, protective, flexible pouches . . . formed, filled and sealed on Bartelt packaging machinery.

For custom equipment engineered to meet their specific packaging requirements, Lawry's looked to Bartelt . . . where an unmatched combination of experience and know-how produces America's finest line of packaging equipment.

Bartelt Engineering Co., Inc.
1900 Harrison Ave., Rockford, Illinois

THE BEST SALESMAN FOR POTATO CHIPS IS CELLOPHANE

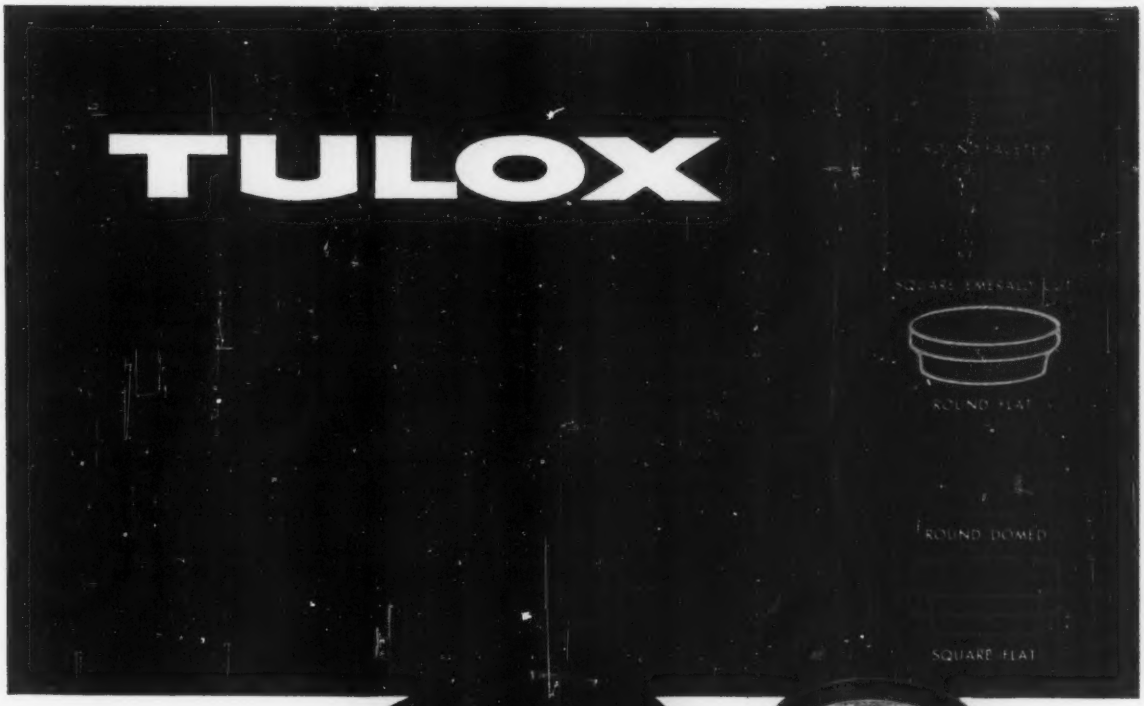
Whether you're packaging potato chips, candies, or baked foods, you'll find that cellophane will move your product from the supermarket to the home faster than any other packaging material. Why is that so? It's because cellophane has that eye-catching transparency that shows a product at its selling best. Plain or printed, cellophane does the job. Call in an Olin Cellophane representative or converter today.

P.S. Olin specialists can give you sound, sales-tested advice on how to create better packages. So when you think of cellophane, think of Olin *first*. Olin CELLOPHANE

OLIN MATHIESON
Packaging Division
655 Madison Avenue, New York 21, N. Y.

OTHER PACKAGING DIVISION PRODUCTS: CARTONS, CONTAINERS, BAGS, LIGHTWEIGHT PAPERS, WRAPPING TISSUES

TULOX



- Semi-rigid, yet feather light in weight
- Shatterproof . . . and highly scuff-resistant
- Crystal-clear or twin-tone colors
- Wide product view . . . exceptional display
- "Mix or match" tops and bases
- Wide choice of style-right color plans
- Plain or decorated to your needs
- Standard or custom design
- Bases straight sided or "stepped" for card insert
- Precision fit . . . easy to load and assemble
- PRODUCTION READY NOW . . . yet proved in the market place

EXTRUDED PLASTICS, INC.
General Offices: Norwalk, Conn.
Plants: Norwalk, Conn., Marion, Ind.
In Canada: Twinpak Ltd., Montreal, Toronto

☐ Send me samples and prices of new **TULOX** boxes.
☐ I am sending samples of my products.

Name _____
Title _____
Firm _____
Address _____
Nature of Products _____

3EP60

The Perfect Container doesn't Just Happen!

WHEN Mother Nature created the turtle, she gave him a comfortable house to live in. Mr. Turtle's portable, protective covering illustrates a container that does what it's supposed to do . . . best!

Vacuum pack . . . a forever-fresh sales approach!

In the grocery field, Canco's Vacuum-Pack Coffee Can illustrates a container that does what it's supposed to do . . . best! Vacuum sealing pioneered by Canco keeps the product's fresh flavor in by keeping air out. The improved self-tracking tear strip is easiest to wind . . . wins new customers and the rewards of repeat business.

To help boost your sales and profits, put Canco's aggressive team of research, manufacturing, and marketing experts to work for your products.

GREAT CONTAINER IDEAS COME FROM CANCO

CANCO DIVISION
AMERICAN CAN COMPANY

INSTaNT LaBELS

Don't waste precious time waiting for a printer to perc! With one of the many Soabar machines you can mark what you want, when you want it, instantly. Contents, product identification, pre-pricing . . . all done with a flick of the finger. One machine marks a variety of easy-to-read, individualized labels: Quick-stick (pressure-sensitive), Thermaply (heat-seal), gummed and ungummed, plus many tag stocks. For the answer to today's complex marking needs, call on Soabar—the instant time and money saver!

Soabar COMPANY

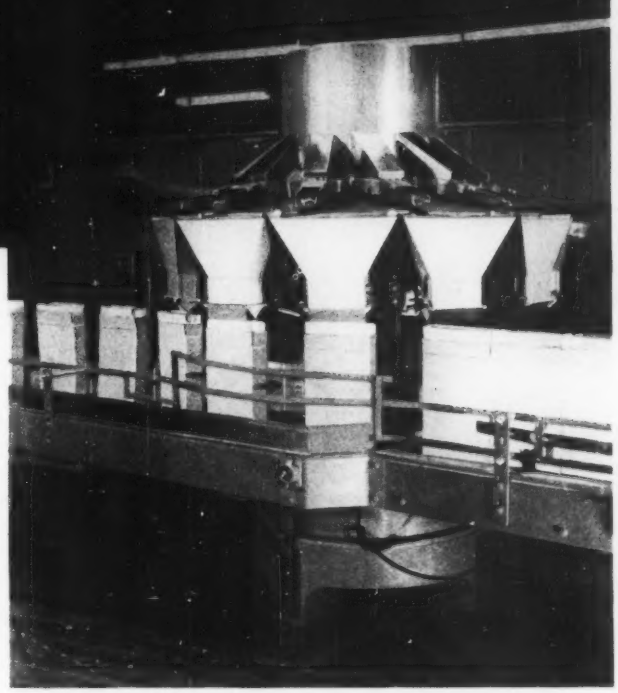
Specialist in Marking Equipment and Roll Tickets and Labels Since 1912

4221 Van Kirk Street, Philadelphia 24, Pa.

In Canada distributed by The Jonergin Co., Inc. and W. J. Westaway Company, Limited

Wright NT WEIGHER

A new rotary net weigher for packaging the total output of a continuous production process. Examples: Dry cereals, crackers, and similar free-flowing products.



Exceptional *Accuracy at High Speed plus the advantages of Straight-Line Production*

Wright NT Weigher . . .

so fast that it handles the total output of a continuous production process such as a giant bakery oven.

so accurate that its weight reliability exceeds that of many competing systems which operate at slower speeds.

- The product being packaged flows to approximately 95% of desired net weight into 12 buckets mounted edge-to-edge on a rotating turret. The remaining 5% is finish-filled into the buckets by their individual feeders.
- After the desired net weight is reached, product is dumped into an awaiting moving carton.
- Weighing is electronic.
- There are no intermittent motions. Product flow and carton flow are continuous. Production is straight-line.
- The system automatically adjusts for variations in product flow and density.

Your inquiry is invited. Wright Machinery Company Division of Sperry Rand Corporation, Durham, North Carolina.

MAIL THIS COUPON FOR COMPLETE INFORMATION

WRIGHT MACHINERY COMPANY

DIVISION OF SPERRY RAND CORPORATION • DURHAM, NORTH CAROLINA

WM

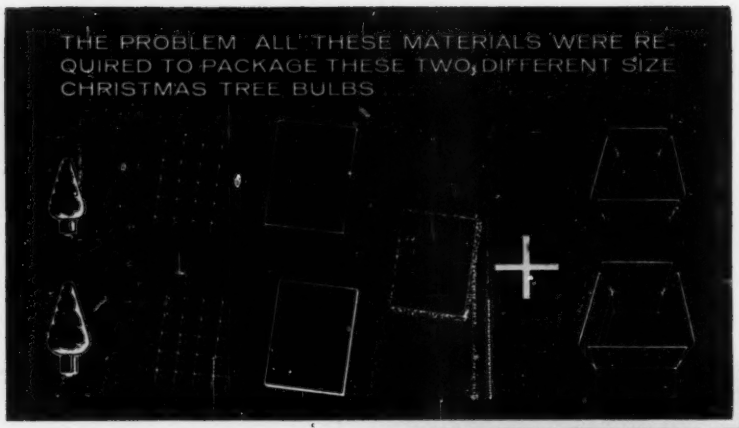
Gentlemen: Please send me technical details on your new Wright NT Weigher.

NAME.....

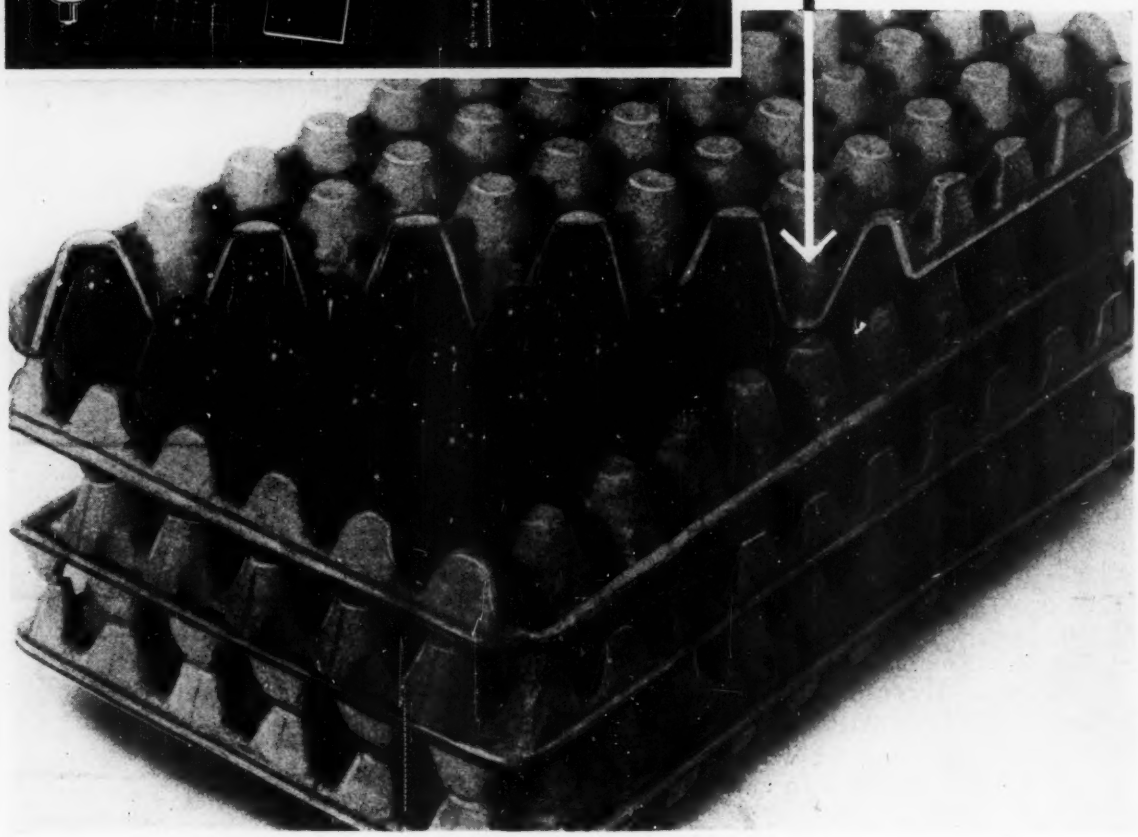
COMPANY.....

ADDRESS.....

.....



Another problem solved with Keyes Custom Molded Packaging



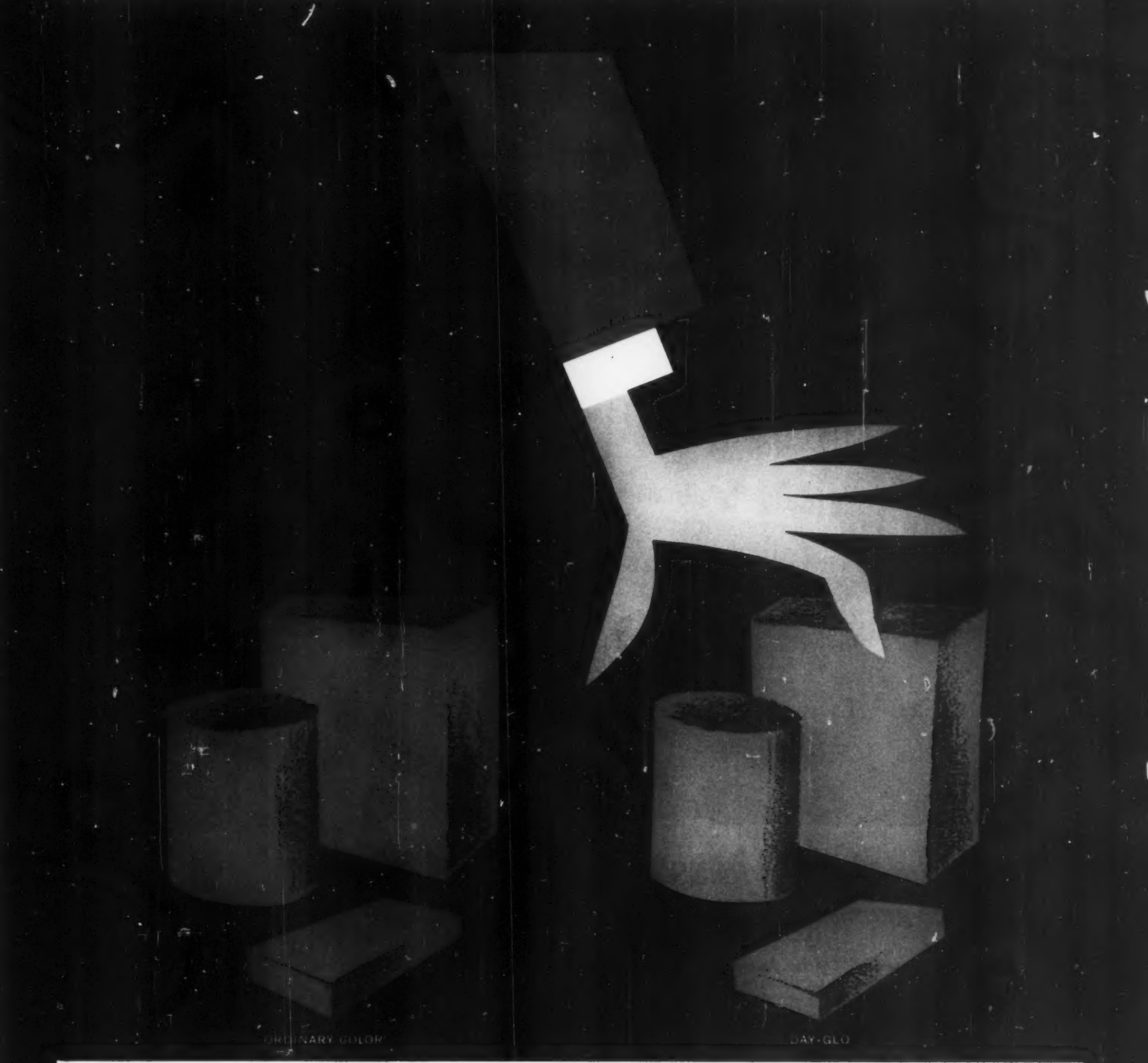
NOW BOTH SIZE BULBS ARE PACKAGED WITH A SINGLE MOLDED PULP TRAY AND STANDARD BOX

Let Keyes Product Development Engineers show you how to cut costs, cubage and breakage with custom molded packaging

Molded pulp is the one inexpensive packaging that combines rigidity with remarkable cushioning properties. This packaging material can be molded to the shape of your product . . . eliminating the need for set-ups, cell partitions, fillers, pads and loose packing material. If you'd like to learn how Keyes Custom Molded Packaging can cut your costs, cubage and breakage, write:

Product Development Division, Dept. MP-9,

Keyes Fibre Company, Waterville, Maine



Litho in U. S. A.

In Packaging...This color difference can make the sale

The bright color on the right is an example of printing with Day-Glo* fluorescent red. On the left is an extremely bright non-fluorescent printing ink. If the comparison appears exaggerated, it is because along side of Day-Glo any non-fluorescent color looks lifeless. The brightest shades of ordinary color reflect only part of the light to which they are exposed. Fluorescent color reflects and converts most of the energy of light into brilliant colors of exceptional purity. Day-Glo is *inherently* more intense, with a fresh new power that glows from within.

If your package depends on point-of-sale impact, the extra dimension of Day-Glo can help make the sale. New low-cost Day-Glo inks are now available for the whole range of packaging requirements, as well as for brilliant displays, posters and other printed material. Eight standard colors give trouble-free production in letterpress, lithography, gravure or silk screen.

For more information and color samples, write

SWITZER BROTHERS, INC.
Printing Ink Division, 4732 St. Clair Avenue, Cleveland 3, Ohio
Sales Offices in New York, Chicago, Los Angeles and Berkeley, California

Day-Glo is a registered trademark of Switzer Brothers, Inc., originators of daylight fluorescent colors.

. . . with Dennison PRES-a-ply® Labels stripe-gummed with permanent adhesive!

That's why several Charles Antell Hair Care Products were able to participate in a highly successful premium promotion with all other B.T. Babbitt Inc. products. The problem was to attach *pilfer-proof* evidence of purchase to polyethylene and silicone-treated bottles . . . two hard-to-label surfaces.

Protection against coupon pilferage, comparable with that provided by wrap-around labels, is now easy to get with Dennison PRES-a-ply labels, gummed only at the ends with permanent pressure-sensitive adhesive. They are speedily and economically applied on the production line to lacquered, metal, silicone-treated and other moisture-resistant surfaces with the aid of low-cost, automatic Dennison PRES-a-ply Label Dispensers.

Whether your products are packaged in bottles, film, foil or paper, Dennison can help you tailor your labels to any promotional or informative task. That's because Dennison makes labels with all kinds of gumming: pressure-sensitive, water-moistenable and heat-seal . . . for either permanent or peelable adhesion. Experience in designing and producing labels for America's leading merchandisers has also created a pool of ideas on which you can freely draw.

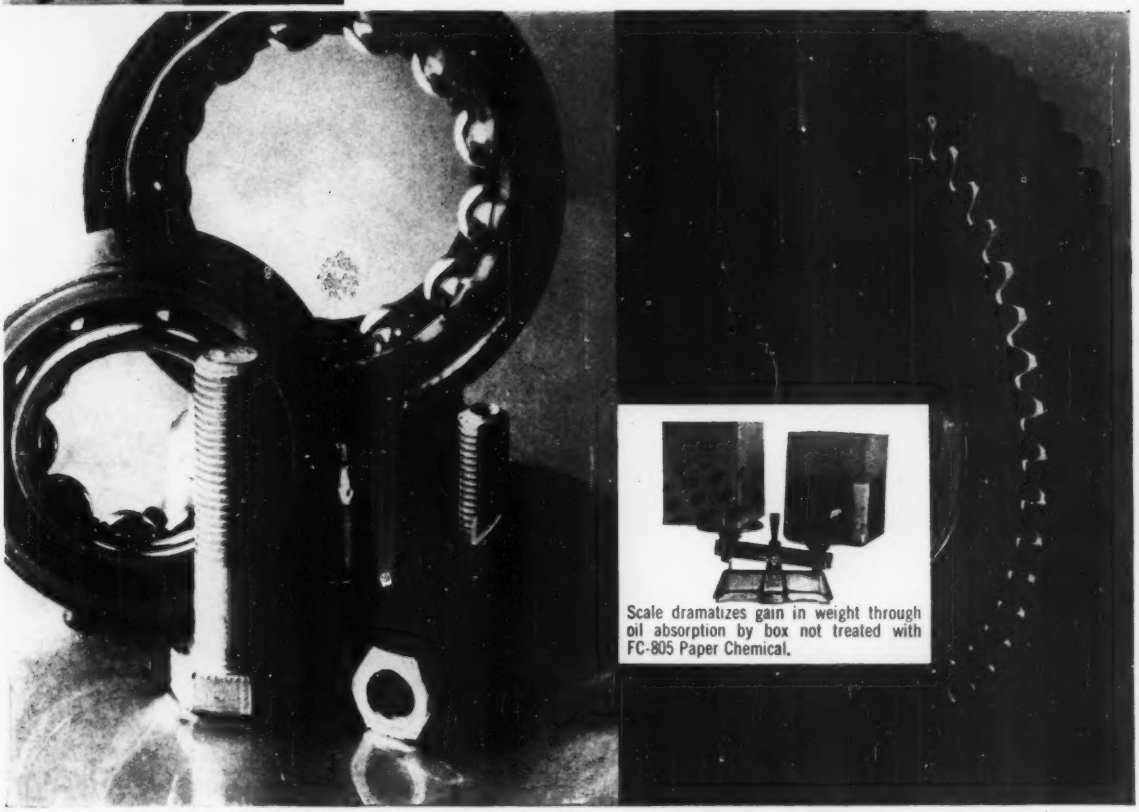
Add extra value to your next labels . . . idea-wise, quality-wise, cost-wise . . . by adding Dennison to your merchandising team. Creative suggestions and cost quotations are yours for the asking.

Dennison *Helping you compete more effectively*

FRAMINGHAM, MASSACHUSETTS

3M COMPANY CHEMICALS

THE RAW MATERIALS OF PROGRESS



Scale dramatizes gain in weight through oil absorption by box not treated with FC-805 Paper Chemical.

You can lock grease and oil inside paper boxes treated with 3M Brand FC-805

PAPER CHEMICAL

Proof positive that FC-805 Paper Chemical locks in oils and greases necessary to your products—and helps keep your paper carton clean and readable. The box on the left (inset above) was treated on the inside only with FC-805. Its counterpart on the right was not treated at all. Then, both were packed with sweeping compound and subjected to boiler room temperatures of 110° F. to 120° F. for 48 hours. At the end of that time, the untreated box had already absorbed 13% of the oil from the sweeping compound. *The treated box absorbed none.*

Results such as this are common in the field. They can be applied to your packaging problems, too. And with FC-805 Paper Chemical, there's no sacrifice of color, strength, porosity, flexibility, or any other important characteristic. That's because it is a member of the 3M family of fluorochemicals. It is not a continuous film or coating. Rather, *it treats each paper fiber* for maximum resistance to grease or oil.

FC-805 Paper Chemical can help you: Prevent unnecessary wax penetration on waxed papers. Permit use of thinner-than-normal polyethylene coatings. Prevent grease crawl and staining at seams and closures in multi-wall bags. Help "hold out" dope and prevent strike-through in carbonizing tissue. Give unparalleled resistance to asphalt penetration. Permit packaging of greasy and oily parts without penetration. In these many ways, FC-805 Paper Chemical has helped industry solve packaging problems of long standing.

And for flexible, see-through packaging—look to KEL-F® Brand Plastic. Film made of this product is completely impermeable to water vapor, virtually unaffected by heat, caustics, acids, temperatures, rough handling, storage and shipping. Ideal for paints, cosmetics, pharmaceuticals and chemicals, it provides maximum packaging security, good looks and convenience.

Learn how these 3M products can help you. Tell us your problem in a letter addressed to: 3M Chemical Division, Dept. KCB-90, St. Paul 6, Minn.

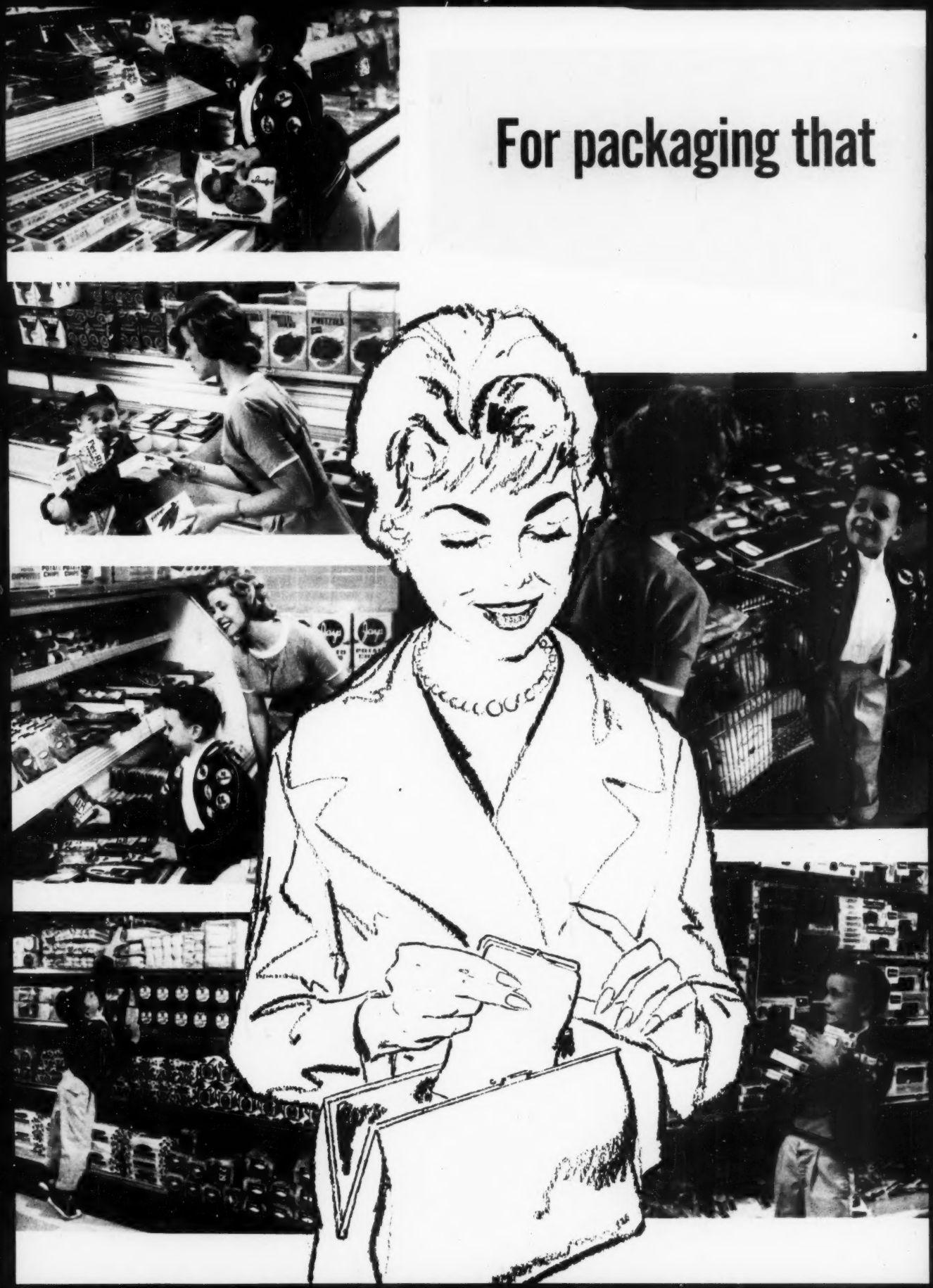
"KEL-F" is a Reg. T.M. of 3M Co.

CHEMICAL DIVISION

MINNESOTA MINING AND MANUFACTURING COMPANY

...WHERE RESEARCH IS THE KEY TO TOMORROW

3M COMPANY


For packaging that

protects many foods

Keep your eye on the Little Leaguer as he ranges from department to department. Every package he picks up . . . tosses into the shopping basket . . . pulls out of the bag at home . . . takes heavy (and repeated) handling. When "made by Marathon" is part of the package, you can be sure it'll stand up . . . always look fresh and bright.

As a leading supplier of food packaging, Marathon offers an unsurpassed selection of protective and promotive paper, paperboard, films and foils. In addition, Marathon packages speed filling operations, feature brilliant color printing, keep products at their peak till picked up by shoppers.

Next time you have a question about *which* packaging materials best suit a product, please remember *Marathon has the answer.* Marathon, A Division of American Can Company, Menasha, Wisconsin. In Canada: Marathon Packages Limited, 100 Sterling Road, Toronto 3.

For packaging . . . and ideas . . .

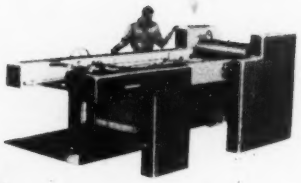
you can't beat marathon

Clark-Aiken

FROM ROLL TO PACKAGE *your profit picture is vastly improved with finishing room equipment designed to your requirements*

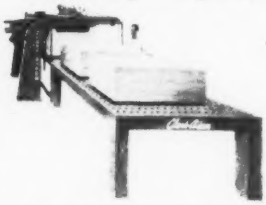
by Clark-Aiken

FINISHING ROOM AUTOMATION OFFERS BIG, NEW PROFIT HORIZONS

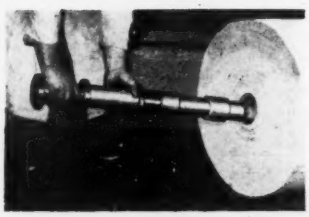


. . . watch the new **TYPE G CUTTER-PILER** *in action--demonstrating fast, economical registration and general purpose sheeting.*

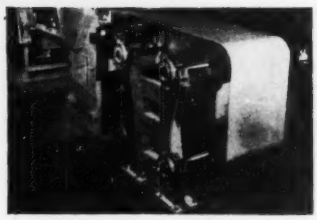
. . . learn how Clark-Aiken's new line of **LIFT TABLES** *expedite materials handling anywhere in the shop—and for the first time see the all new* **AIR TABLE**—*typical of the many Clark-Aiken innovations in finishing room machinery—engineered for*



fast, efficient pile removal, transfer and packaging.



. . . you'll recognize the possibilities for greater production afforded by the improved Clark-Aiken **STUB ARBOR** *that speeds roll changeovers and cuts labor costs.*



. . . you'll see demonstrated, on one of Clark-Aiken's many models of custom built **ROLL STANDS,** *a refined, more effective braking system for fast, positive cutter feeding from rolls.*

the Clark-Aiken **COMPANY, 795 HART AVE.,** *Lee, Massachusetts*

CANADIAN REPRESENTATIVE:
GORDON W. KEATES,
133 FLORIDA DRIVE,
SCARBOROUGH, ONTARIO

Shoot for instant sales...

with sure-fire packaging!

Here's protection that keeps your powder dry—just like a built-in desert! Add vivid, sharp printing, and you have the finest new packaging developed for hygroscopic products.

Look at the range of products and sizes. Milk to onions. A cupful to a bucketful. Bags, pouches, overwraps. One (or more) of these packages could help *you* increase sales and cut packaging costs.

For case histories and complete information, write Hygroscopic Packaging, 2101 Williams Street, San Leandro, California. East of Denver, write 4410 Hunt Avenue, St. Louis, Missouri.

CROWN ZELLERBACH

WESTERN-WAXIDE DIVISION

Plants and sales offices in principal cities throughout the United States. Headquarters, 2101 Williams Street, San Leandro, California. In Canada address product inquiries to Crown Zellerbach Limited, Vancouver, B.C.

Especially for the ladies . . .

Here's elegance personified. The manufacturer knew that the most natural time to take this prenatal vitamin capsule is at meals. So the package was planned to blend handsomely with any table setting. Its rich, dignified appearance is set off by the pearl-like lustre of a molded cap from Armstrong. Delicate decorations screened in gold on the top complete the picture.

Whatever your glass packaging need, you'll find the answer at Armstrong Cork Co., Lancaster, Pa.

Armstrong PACKAGING

1860-1960 Beginning our second century of progress

WATCH ARMSTRONG CIRCLE THEATRE EVERY OTHER WEDNESDAY EVENING ON CBS-TV

Background for Packaging

Packagers must watch Washington ever more closely. In one day recently—July 12—the President signed into law two far-reaching packaging regulations: (1) the *Hazardous Substances Labeling Act*, affecting all packagers of substances which are toxic, corrosive, flammable, irritants, strong sensitizers or capable of generating dangerous pressure and (2) the *Color Additives Bill*, affecting all artificially colored substances which may contact the body. The latter bill includes the disputed Delaney cancer clause. The hazardous-substances bill has an unusual clause making it effective upon signing, but delaying imposition of penalties for 180 days. *Coming up*: A new F&DA regulation requiring hazard warnings in the labeling of prescription drugs.

The swing to plastics for liquid detergents has attracted the attention of *The New York Times*, which reports that 75 to 80% of them now come in plastic bottles. Output of 400 million plastic bottles for detergents alone is predicted for this year (bearing out a 1959 forecast of this magazine). One private-brand packager alone will use 50 million bottles next year. *Note*: The customary hour-glass shape of detergent bottles has a practical purpose. Packagers find that it minimizes accidental squeezing that might cause liquid to spurt out.

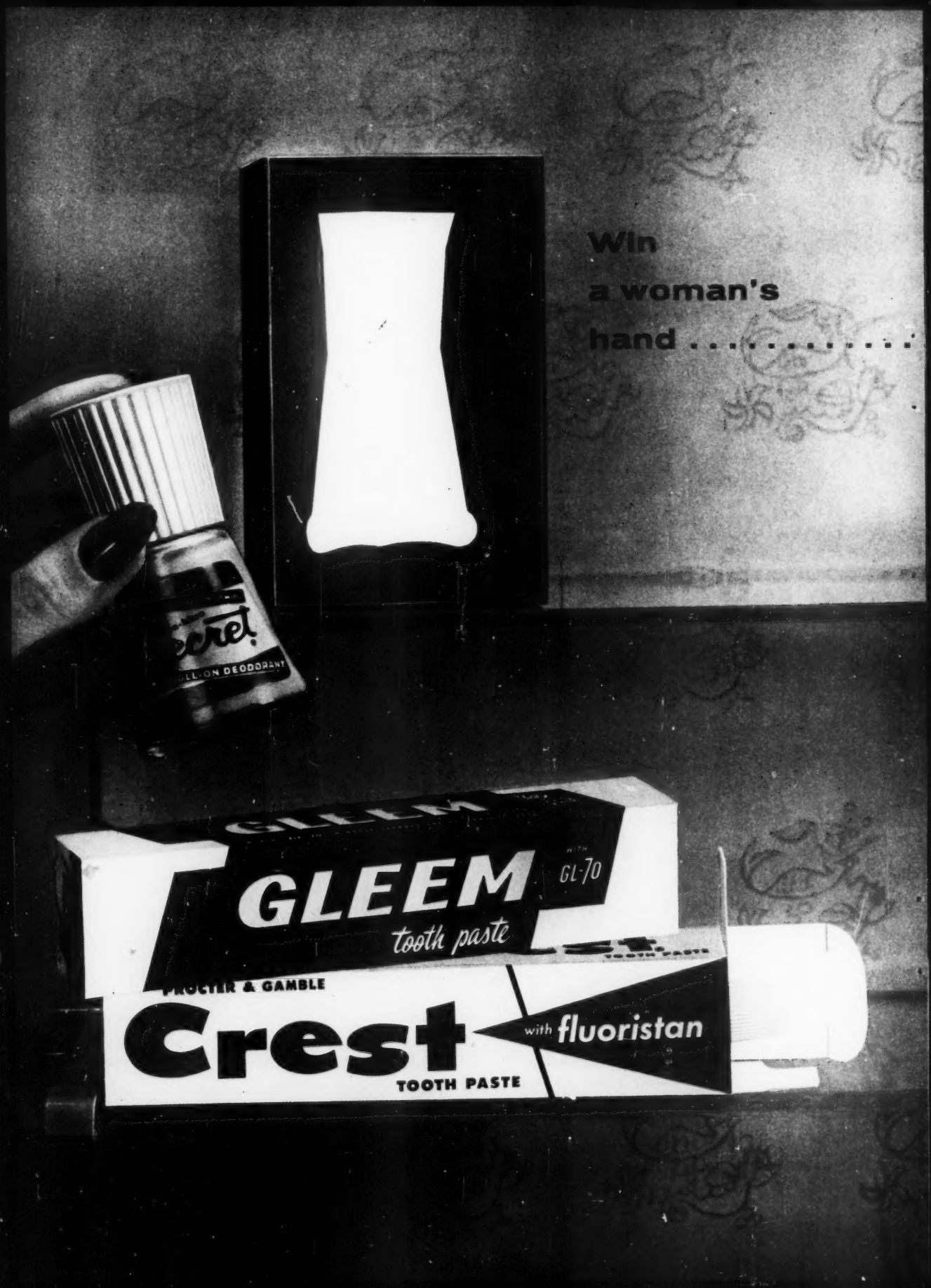
A thought to ponder: "It is possible to evaluate a country's standard of living by the progress it is making in consumer packaging. All over the world, packaging is on the move. Europe, in particular, is on the threshold of tremendous changes in marketing and shopping habits—due primarily to the widespread development of supermarkets and the many changes in packaging methods they demand."—*Roy E. Hanson*, pres., *Milprint Overseas Corp.*, to an international sales seminar in Brussels.

Package planners should take note of this: Forty-six of every 100 persons entering a department store leave empty handed, according to a survey by *Amos Parrish & Co.*, marketing consultants. Major reasons: poor selling, unbalanced stocks and merchandise keyed to the wrong age groups. Price was found to be a factor in less than 1% of the no-sale walkouts. Even poor selling, it may be noted, could be overcome by the right kind of self-selling package design and copy.

See the breakthrough of polyethylene bags in consumer-size sugar packaging. *California & Hawaiian* now has 2½-lb. printed bags for both brown and white sugar; *Great Western* has both 2½- and 5-lb. sizes and *American Crystal* uses 5-lb. bags. The bags are economically formed-filled-sealed on conventional equipment and users cite impelling merchandising advantages in consumer eye appeal, reduction of lumping and elimination of breakage and sifting on retail shelves. The trend may reach to other low-cost, free-flowing products.

New applications of old packaging methods seem endless. A few pioneering egg packagers have discovered that overwrapping consumer egg cartons with cellophane extends the shelf life of the eggs as much as 700%. Normal shelf life is four days; now it may be extended to a month. Look for a big swing to cellophane wrapping in the egg industry.

Higher sales but lower profit margins are in prospect for most paper-container companies this year, says *The Value* [*Continued on page 42*]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a woman's
hand . . . . . .
GLEEM
WITH GL-70
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TOOTH PASTE

. . . . . with the aid of

BRITE-PAK ENAMEL COAT

Secret—Gleem—Crest . . . nationally famous products of Procter & Gamble . . . have successfully won acceptance by women. Attractive packaging helped, of course, and West Virginia's Brite-Pak Enamel Coat is a bleached board used in all three.

Snow-white on both sides and all the way through, Brite-Pak Enamel Coat is made of 100% virgin pulp, and gives these sparkling cartons a more sanitary and inviting look than old-fashioned containers that have drab interiors next to the product.

Brite-Pak Enamel Coat takes full color process printing brilliantly, gives beautiful product illustrations, yet is remarkably economical.

You'll find Brite-Pak Enamel Coat an excellent choice for colorful, appealing packages . . . the modern way to *upgrade* your packaging. Write to Bleached Board Division, West Virginia Pulp and Paper Co., 230 Park Avenue, New York 17, N. Y.

West Virginia Pulp and Paper

Line investment survey. *Reasons:* Selling prices have lagged behind mounting costs; employee productivity has not notably improved. Possible remedies suggested by *Value Line:* Increased emphasis on technological improvements and new products. Although what is really needed is an across-the-board increase in selling prices, says the survey, this does not seem at all likely due to present competitive influences.

Little noticed was Section 29 of the "Model State Law on Weights & Measures" issued recently by the *National Congress on Weights & Measures.* It states that: "Whenever a commodity in packaged form is advertised in any manner and the retail price of such commodity is mentioned, there shall be declared conspicuously in such advertisement the actual weight, measure or count of the contents of the package as declared on the package." *Grocery Mfrs. of America* will fight this, pointing out it will increase cost of food-stores' newspaper advertising and raising a fundamental question whether as a matter of policy a weights-and-measures law should extend beyond labeling to the broader field of advertising.

Projections by the *Reynolds Metals Co.* indicate that total yearly sales of transparent film will grow 67%—an increase of about 465 million pounds—by 1965, with plastic films accounting for at least 82% of this increase. Statistics on which this forecast is based indicate that about 64% of all film sold presently is used in packaging. Reynolds looks for major growth not only in the polyolefins, but in water-soluble PVA film and oriented PVC. Production of the latter two films this year is estimated at slightly more than 1,000,000 lbs. each.

New light on the supermarket's role in merchandising packaged goods is cast by a 10-month *Dept. of Agriculture* study of buying patterns. Paper products were purchased by 34.7% of all shoppers, topping the list for both foods and non-foods. Soaps were second among non-foods, at 27.4%; health and beauty aids third, 17.5%, and cleansers fourth, 11.9%. Among foods, the most frequently purchased items were cookies and crackers, canned vegetables, coffee, cereals and beverages, in that order. Fresh meats and produce were not covered.

[*Continued from page 39*]

Market for foil scrap is in prospect for converters and packagers with announcement of a new venture in Kansas City. New plant of *U. S. By-Products Corp.* has been set up to reclaim metal from laminated aluminum foil scrap, which previously had no salvage value. The process reportedly will handle all combinations of aluminum foil with paper (waxed or lacquered), cellophane, Mylar and polyethylene, excepting only foil-to-boxboard and foil-to-paper laminations.

Consumer awareness of the practical value of plastics in packaging is evidenced by a recent survey of 1,241 consumer panelists by *U. S. Industrial Chemicals Co.* Among the products for which the respondents recommended plastic packaging were household cleaners, toothpaste, bread and jelly. Plastic coatings for milk cartons were favorably mentioned. From the viewpoint of these consumers, contacted in 17 major cities, the most attractive qualities of squeezable polyethylene packages are "noiselessness," transparency, break resistance and light weight. Surprisingly, noiselessness ranked highest of all in favor.

Supermarkets suffer from over-expansion (see "*The Supermarket: What's Happening?*" *MP, May '60, p. 83*). In just two years, *Super Market Institute* reports, the potential number of people served by each new super has dropped from 13,300 to 7,300. Last year, 43% of new stores ran more than 10% under their sales estimates. Supermarket-chain stocks have been downgraded. All this indicates that the bloom is off and that packages will have to demonstrate definite sales performance in order to win space in the supermarket.

PACKAGING PROBLEM?

CALL IN Kehr

Burry's Did It... With This Terrific Promotion Item!

The Problem: To design an attention-getting wrap that would perform well on automatic wrap equipment!

The Solution: Kehr's exclusive high-gloss heat-seal coating was applied to both sides of an eye-appealing super calendered opaque sulphite offering maximum advantages in production . . . minimizing wrapping machine slowdowns and headaches.

The Result: No shutting down of wrapping machines for cleaning — as happens with other materials. A 3-color design that cried out—"buy me!"

You're Next: Whether it be heat sealing paper, cellophane, foil or wax papers—and no matter what the product—if it's better sold in flexible packaging it's better to call in Kehr. Drop us a line, wire or phone us at once!

Our Success is Built on Solving Flexible Packaging Problems

America's Fastest Growing
Flexible Packaging Manufacturer

Kehr PRODUCTS COMPANY
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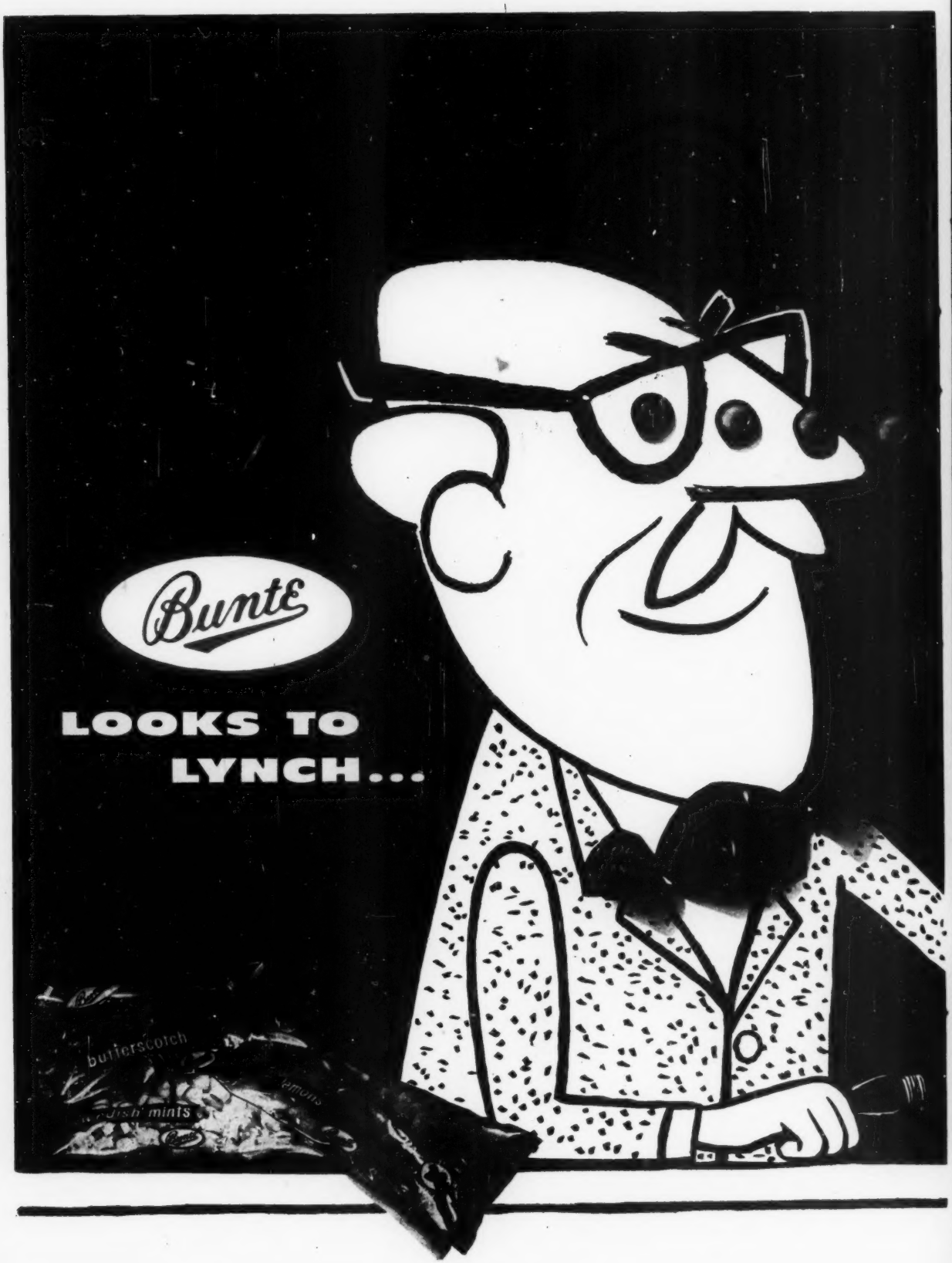
Designers and Manufacturers of: Bags and Rolls from Flexible Films, Foils, Papers and Laminations printed by the Flexographic or Rotogravure Processes.


Bunte
LOOKS TO
LYNCH...
butterscotch
lemons
fish mints

Now 28 Bunte candies go to supermarket from one automated Lynch packaging system

Up to 25% more production and a new low in changeover time. These are two of the important advantages Bunte gets from their switch to the versatile, flexible Lynch system. An unequaled volume of bulk and pre-wrapped candies flow automatically through the integrated Lynch Robo-Lift and weighing system to bags formed, filled and sealed by Robo-Wrap at a rate 25% faster than most competitive machines.

Bunte reports weighing accuracy at an all-time high, down-time and rejects at an all-time low.

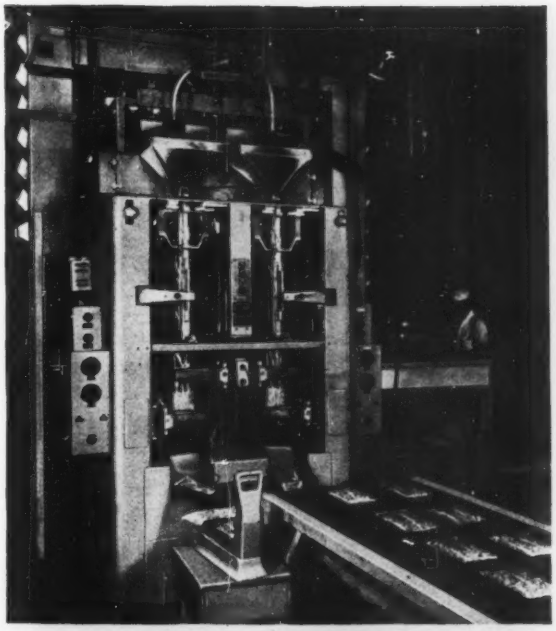
For their jelly candies Bunte has ordered another automated Lynch system. It automatically sifts out excess sugar—and excess packaging costs.

Talk with Lynch engineers for a complete analysis of your packaging needs—without obligation.

ROBO-LIFT is completely integrated with all other handling and packaging units in the Lynch automated system, to vertically lift or horizontally convey powders, solids, granules—almost anything that flows—gently and undisturbed.

ROBO-WRAP exclusive hand-over-hand action increases production, cuts stop time; forms, fills and seals up to 240 pillow-type single or double wall packages per minute with face-to-face or overlap seam seal. Lower drive speeds, far less stress on materials, reduced machine wear. Uses almost all materials.

LYNCH WEY-MOR scales are specially designed for speed and accuracy in handling a wide range of weights and products.



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LEADERS LOOK TO LYNCH—
FOR MACHINES THAT PACKAGE ALMOST EVERYTHING

Manufacturing Engineers of automatic processing equipment in the glass, packaging, plastic and other industries.

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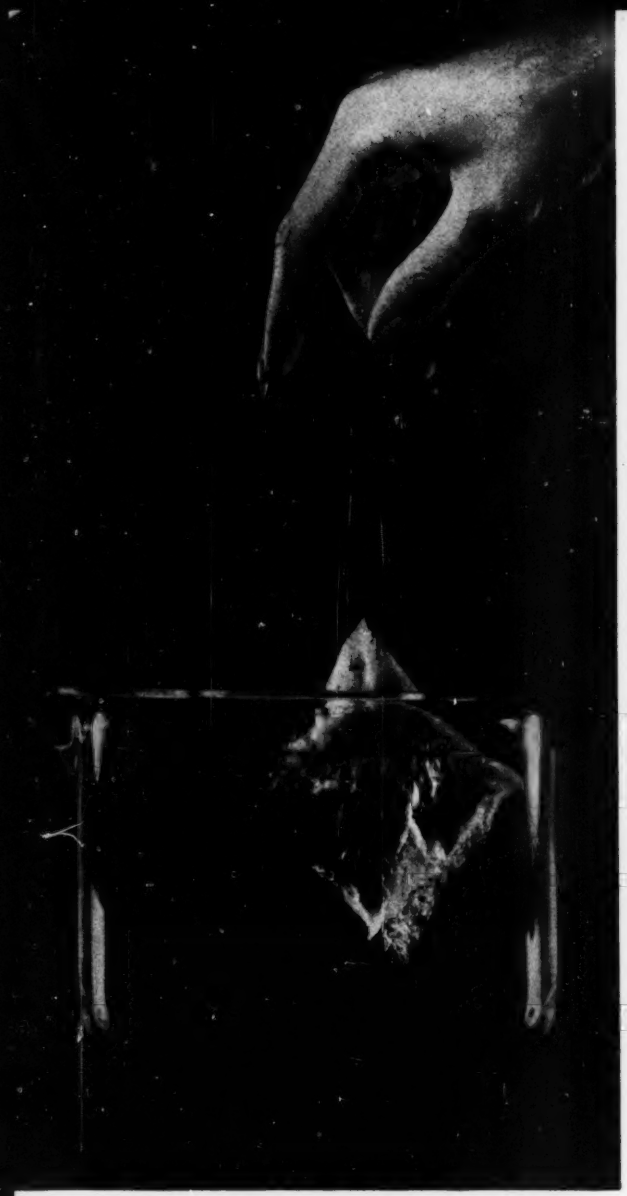


REVOLUTIONARY NEW PLASTIC

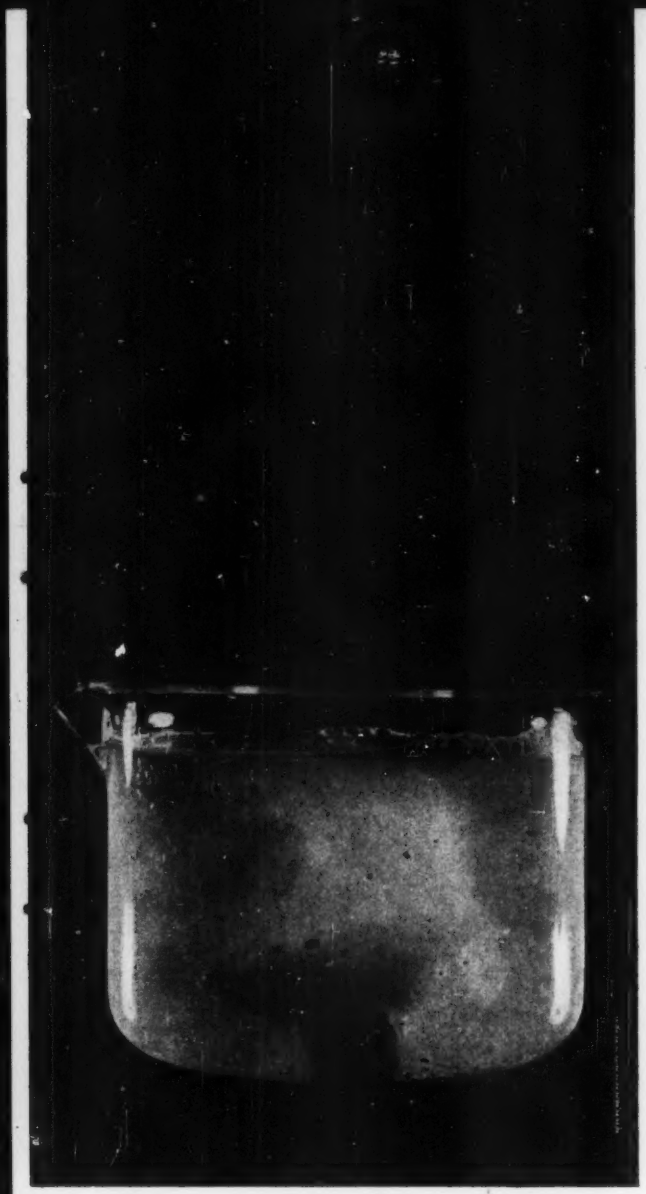
Films of Borden's Lemoflex open new packaging possibilities

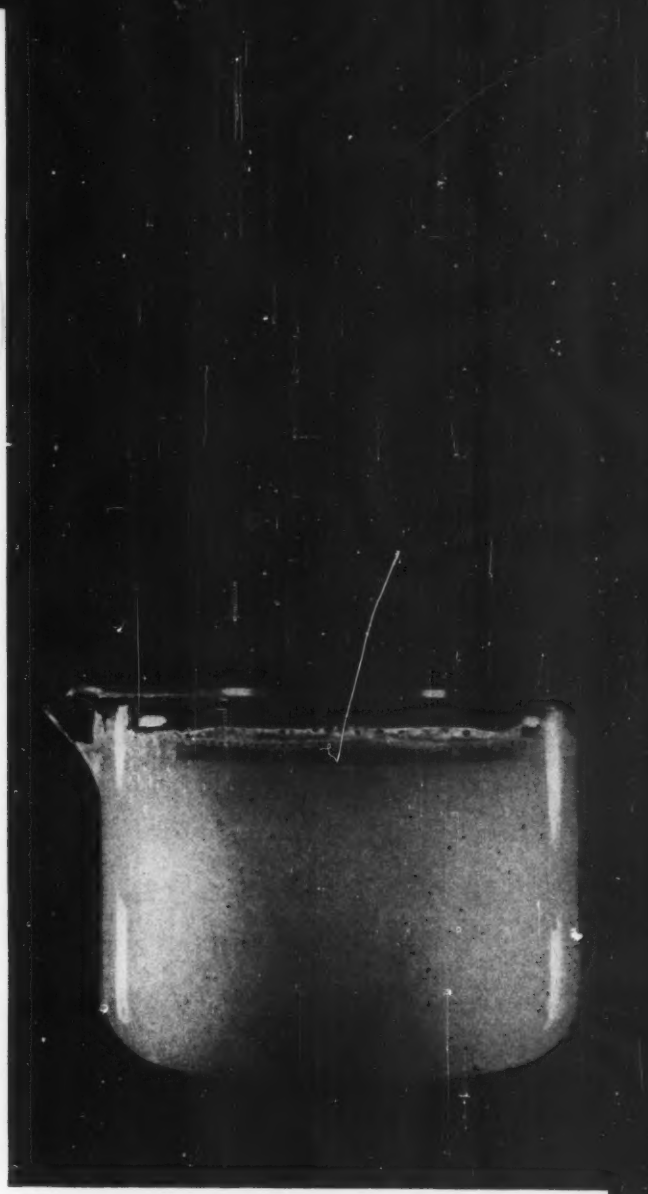
Drop this new plastic package into water and presto! The film dissolves, releasing the contents.

Premeasured amounts of dyes, detergents, bleaches, insecticides, and toxic and sanitary non-aqueous chemicals quickly go into water solution . . . *without touching the hands.*

Package films cast of Borden's Lemoflex . . . an internally plasticized polyvinyl alcohol resin . . . offer maximum water solubility. Lemoflex films are strong, heat-sealable, transparent, permanently flexible, and can be imprinted. They offer excellent resistance to grease, oil, and non-aqueous solvents.

©The Borden Company





PACKAGE DISSOLVES IN WATER!

To learn just how easy it is to incorporate the added advantages of Lemoflex films in your packaging program, clip and mail the coupon!

THE BORDEN CHEMICAL COMPANY

350 Madison Ave., New York 17, N.Y.

The Borden Chemical Company
Polyco-Monomer Dept. MP-90
350 Madison Avenue, New York 17, N.Y.

Gentlemen:

Please send me samples and more information about Lemoflex, the Borden packaging resin that dissolves fast in cold water.

*NAME*_____ *TITLE*_____

*COMPANY*_____

*STREET ADDRESS*_____

*CITY*_____ *STATE*_____

WHATEVER
THE
PRODUCT...
WHATEVER
THE
PACKAGING
NEED...

FOIL FITS It!

Pillsbury Biscuits and Rolls command more attention at the point of sale, stay fresh longer in bright, eye-appealing foil. Labels produced by Western-Waxide Division, Crown Zellerbach Corporation. Cannisters by R. C. Can Company. Jackson & Perkins Rose Bushes are easily and attractively packaged—complete with their own specially formulated soil conditioner—in moisture-retaining foil bags produced by Western-Waxide Division, Crown Zellerbach Corporation.

For The Competitive Edge In Packaging... **ACT**

Kaiser Aluminum's "ACT" (Aluminum Consulting Team) is a group of packaging specialists created to help designers and users of packaging *use aluminum foil* to develop competitive advantages in cost, sales appeal and package efficiency. Get the full story of how "ACT" specialists in package engineering, design, processing equipment, marketing and research can help you gain greater sales for your products. Call the Kaiser Aluminum sales office listed in your telephone directory. Or write "Packaging", Kaiser Aluminum & Chemical Sales, Inc., Kaiser Center, Oakland 12, California.

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*T. M. Kaiser Aluminum & Chemical Corp.

Jackson & Perkins
California
2 YEAR FIELD GROWN
Roses
Pillsbury
Biscuits
Pillsbury
QUICK
Butterflake
Dinner Rolls

FOiL FitS It!

FOR THE COMPETITIVE EDGE IN PACKAGING...

AC

ALUMINUM CONSULTING TEAM

KAISER ALUMINUM

SCREW CAPS
Ideally suited for liquids as well as dry products

TELESCOPIC AND PLUG TYPE CAPS
For hydroscopic products

SNAP CAPS
Especially suitable for your deluxe line of dry products

ALUMINUM SEALS
Sure, sanitary containers for your injectables

KIMBLE SHORT VIALS...

convenience packaging for you and your customers

Convenience for you: New distinctive squat design of these containers makes for greater stability on automatic, high-speed filling lines.

Convenience for your customers: New compact styling makes Kimble Short Vials less likely to tip or spill.

Space-saving Kimble Short Vials are lightweight and optically clear. Uniform glass distribution provides uniform filling points.

To help make your product stand out from others, your Kimble Short Vials may be distinctively identified with clear, permanent ACL labeling. ACL is fused right into the glass.

Tight-fitting Kimble closures keep your product fresh and clean . . . free from dust . . . keep out dirt and moisture.

Let Kimble put its extensive pharmaceutical packaging experience to work for you in helping solve packaging problems. . . . Ask to see Kimble Drug Sample Packaging Study.

Write to Kimble Glass Company, subsidiary of Owens-Illinois, Dept. DT-2, Toledo 1, Ohio.

KIMBLE CONTAINERS
AN (I) PRODUCT

OWENS-ILLINOIS
GENERAL OFFICES • TOLEDO 1, OHIO

COM

Du Pont's new 2in1 polyethylene gives you clarity and toughness in a single film

This is it! The polyethylene film specifically designed for bag packaging that gives you both clarity and toughness . . . Du Pont's exclusive new 2-in-1 polyethylene film.

Compare it with the clearest polyethylene bag films you can buy today. You'll find it's just as clear. Compare it with the tough polyethylene bag films. You'll find that only the hazy, high-impact polyethylene films are as rugged.

Where can you get it? Du Pont 2-in-1 polyethylene film is now available in printed roll stock and bags through Du Pont Authorized Converters . . . or plain roll stock from your Du Pont Representative. Call an Authorized Converter or Du Pont Representative for all the facts on this latest advance from Du Pont . . . leader in packaging film for 35 years. Du Pont Company, Film Dept., Wilmington 98, Del.

DU PONT
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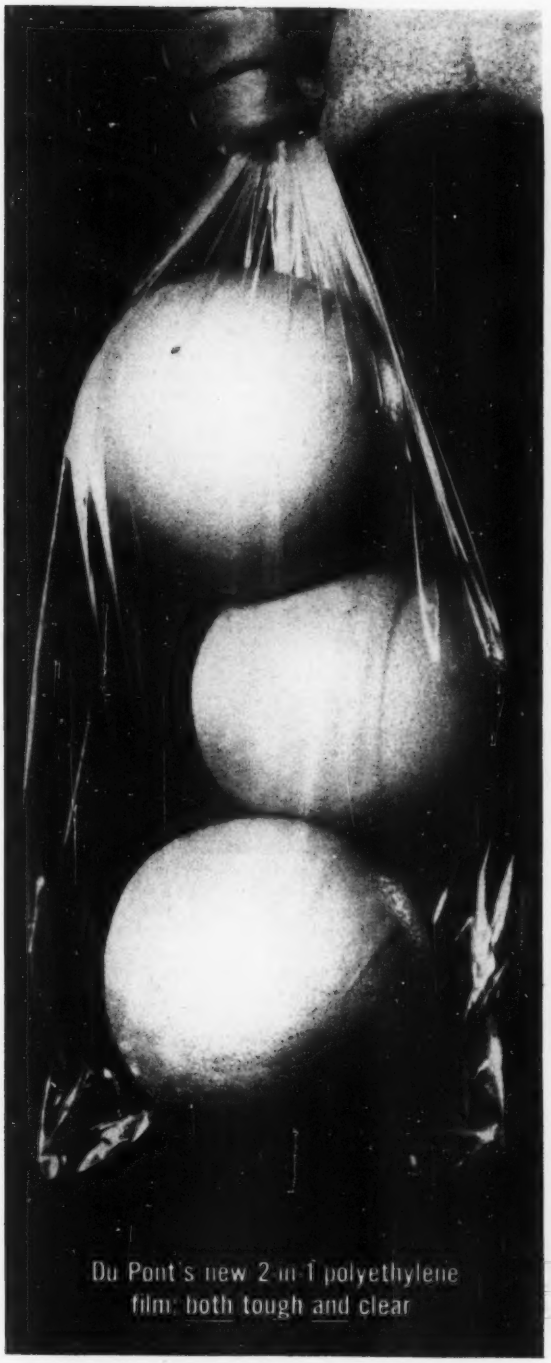
Better Things for Better Living
...through Chemistry

DU PONT polyethylene film

PARE



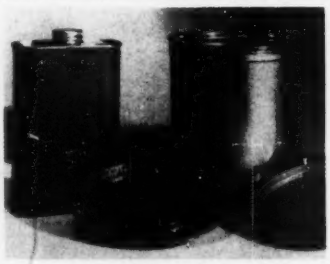
Du Pont's new 2-in-1 polyethylene film: both tough and clear

Competitive polyethylene film: tough but hazy

Equipment & Materials

Textured-finish metal cans

Metal cans with decoratively textured finishes that are said to offer packagers new opportunities for attaining greater shelf identification are available from American Can. The



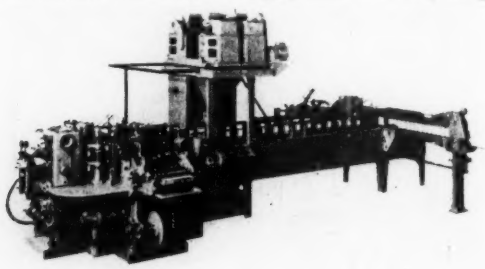
textured surfaces also serve a functional purpose by making containers easier to grasp and hold, the supplier points out. According to the company, special techniques are required to produce the finishes, but the materials involved are handled on regular commercial coating machines. The coatings can be clear material over printing or they can serve as a base coat under the printing. The textured finishes range from a soft "eggshell" effect to a "stipple" to a rough, heavily ridged effect. *American Can Co., 100 Park Ave., New York 17.*

Film with 'zero' moisture absorption

Allied Chemical introduces a transparent fluorohalocarbon film which is claimed to feature virtually zero moisture absorption. Now available in pilot-plant quantities, the film is being sold under the trade name Aclar. Its strength and moisture-barrier properties suggest that the film can be especially useful in the packaging of electronic and other delicate mechanical equipment components and drugs and chemicals (as well as many other products), says the supplier. Other features cited for the film include: (1) retention of flexibility and other desirable properties over a 700-deg. temperature range of minus 320 deg. F. to 390 deg. F., and (2) resistance to almost all inorganic chemicals, including corrosive acids and alkalies. *Allied Chemical Corp., 40 Rector St., New York 6.*

Bagger for pre-ground coffee

FMC is the domestic agent for a Swiss-made machine which is claimed to provide greater speed and more accurate bag filling of pre-ground coffee. Manufactured by Swiss Industrial Co., the Type KFAS straight-line automatic bag former-filler-sealer is said to operate at speeds up to 70 bags per minute. In operation, the machine first forms inner bag liners (of glassine, cellophane or rubber hydrochloride film) with either heat-sealed or glued bottom and vertical seams. Then the outer bag, of kraft paper, is folded around the inner bag and sealed. Completed bags are stripped from the mandrel and carried on a conveyor block where four net weighers alternately discharge product into the passing bags. Filled bags are vibrated, level-checked, passed or ejected, top sealed, then discharged in single file between compression belts. Bag sizes from 8 to 16 oz. can be formed and handled on the machine. Closures can be heat sealed, glued or tied. A feature cited for the new unit is a 12-mandrel turret which is reported to assure continuous, unbroken vertical seams and to allow maximum dwell time for positive, air-tight sealing. *Food Machinery & Chemical Corp., FMC Packaging Machinery Div., 4942 Summerdale Ave., Philadelphia 24.*

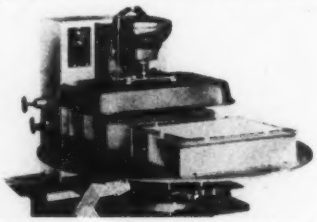


Food wrapper retards spoilage

Said to be capable of retarding food spoilage and extending the shelf life of perishable products is Paterson Parchment's Patapar 27-100T vegetable parchment. The mold-inhibiting material is designed specially for packaging cheese, preserves, baked goods, processed meats and other products which may form mold in storage. The ivory-colored parchment reportedly has been approved by the Food & Drug Administration as meeting the requirements of the Food Additives Amendment of 1958. The material also is suggested for lamination to paper and plastic food containers as a preservative wrapping for industrial products which have a tendency to develop mold. According to the supplier, the parchment can be readily printed and glued. *Paterson Parchment Paper Co., Bristol, Pa.*

Compact blister-packaging unit

A high-speed, compact blister-packaging machine which will make blisters up to 10 by 13 by 3 in. high is being marketed by Erdco Engineering. The unit, called the Clear-Pak, Jr., Model O5CP, is claimed to be low in cost and fast in operation. It reportedly can seal a blister package in about three seconds. The new machine seals one item while the next is being loaded. Change-over from one package size to another is said to take approximately 10 minutes. Within dimensional limitations, says the supplier, the unit can accommodate practically any size or shape of package. Included with the blister sealer are an air-pressure regulator, power index, controls and tooling adapters. Data are available from *Erdco Engineering Corp., Addison, Ill.*



Polyethylene bags offered

Plastic Packaging Co. reports the availability of bags made from its new "super clear" general-purpose polyethylene film. The supplier reports that the blown film from which the bags are fabricated possesses outstanding optical qualities, good strength and machinability. Bags are offered in widths from 2 to 45 in., and can be of any desired length. Wall thickness can range from one to 6 mils. For more data, contact the supplier. *Plastic Packaging Co., 2035 W. Charleston St., Chicago 47.*

End label adheres at low heat

Western-Waxide introduces a heat-sealable end label for bread wrappers that can be adhered at an operating temperature of about 150 deg. F. This temperature, the supplier points out, is some 40 deg. lower than that required

Writer unit for Burroughs Alphanumeric Accounting Machine is protected by VISQUEEN film before it is boxed for shipment.
UNION CARBIDE

VisQueen film
Trade Mark

gets the call for protective packaging at "Burroughs Corp."

Wherever Burroughs machines or parts are exposed to moisture or dust, you'll find VISQUEEN film. Whether you see a component readied for shipment from plant to one of 144 branches, stocked for future use in assemblies or repairs, or delivered to a customer, VISQUEEN film protects from rust or abrasive damage.

Through long experience and exhaustive laboratory tests, Burroughs knows no other polyethylene is as free of pinholes or weak spots, no other is as uniform as VISQUEEN film.

We'll fill you in on the "whys" of VISQUEEN film's superior performance and show you how we can help with your packaging problems if you drop us a line.

Dept. H9

PLASTIC FILMS **VISKING COMPANY** DIVISION OF UNION CARBIDE CORPORATION

6733 West 65th Street, Chicago 38, Illinois. VISKING, VISQUEEN and UNION CARBIDE are registered trademarks of Union Carbide Corporation

for adhering conventional heat-seal end labels. The Crown Seal end label, as it is called, incorporates a quick-melt adhesive coating which is claimed to eliminate excessive-heat problems which may result in melted or pin-hole-burned polyethylene. The end-label coating also remains tacky after the bread wrapper is opened by the consumer, so it permits numerous package reclosures. The new end label, offered at no increase in price, is suitable for polyethylene or cellophane on standard wrapping machines, says the supplier. It is available in custom design and special printed orders. For details, contact *Western-Waxide Div., Crown Zellerbach Corp., San Leandro, Calif.*

Seamless aluminum aerosol can

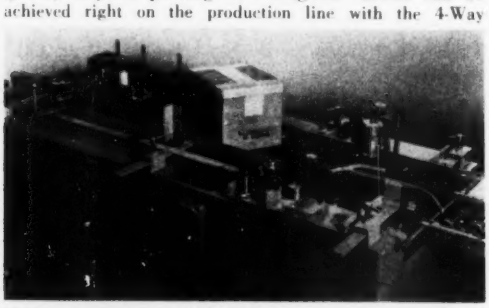
New from Canco's Bradley-Sun Div. is a 6-oz. extruded-aluminum aerosol can. Because the shouldered can is produced by extrusion, the area open for design remains unbroken from the valve fitment down to the bottom of the container and completely around its circumference. There is, of course, no side seam. A significant feature of the new can, says the supplier, is the incorporation of internal coating systems specifically developed for aluminum containers. These systems reportedly were achieved after two years of research work by the supplier. According to the company, selling price of the lightweight, rustfree aluminum aerosol will be in the range of $50 per thousand for a plain, decorated can to $53 per thousand for a four-color, double internally lined can. *American Can Co., Bradley-Sun Div., Hillside, N.J.*

Single-drum flexographic press

Hudson Sharp's new Model A-8 single-impression-cylinder flexographic press is now available. It reportedly has been developed to meet packager demands for quality accurate-register color printing on narrower web widths of extensible films and for shorter job runs. The small, compact press is equipped with a four-color frame; five-color is available at additional cost. The single-impression drum is 30 in. in diameter. Included as standard equipment are: engraved ink-applicating rolls, continuous running ink rolls, overhead web transport with guide rolls, centershaft unwind and rewind with in-and-out web-tension controls, and a positive locking device for color and plate cylinder frames which is claimed to eliminate vibration and to assure printing quality. *Hudson Sharp Machine Co., sub. Food Machinery & Chemical Corp., Green Bay, Wis.*

Four-way carton printing

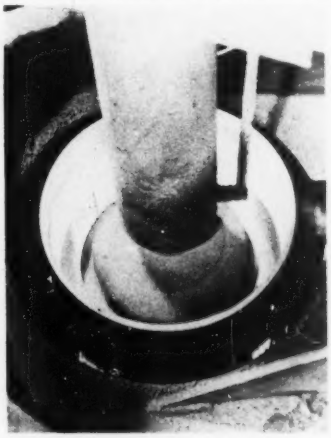
Quality in-plant printing of corrugated cartons can be achieved right on the production line with the 4-Way



Printer, says Algene Marking Equipment. The conveyorized press attachment is designed to fit in line following the packager's case-sealer equipment. The new attachment imprints product and/or code copy on one, two, three or four sides of the filled carton in a single pass. Copy can be imprinted in areas ranging from 1 by 1 in. to 10 by 20 in., accurately registered to pre-determined carton locations, says the supplier. The imprinter is reported to operate at speeds up to 35 cartons per minute, and to contain sufficient ink for printing as many as 40,000 cartons. Inking is by capillary action. The inks, available in any desired color, are quick drying, according to the supplier company. *Algene Marking Equipment Co., Garfield, N.J.*

Centrifugal lining process for pails

Rheem's Container Div. has completed the technical development, engineering and installation of equipment for centrifugal application of specification linings to steel pails manufactured in high volume. Formerly, says the supplier, uniform lining application was a bottleneck in high-speed pail production. The centrifugal pail-lining equipment developed by the supplier deposits a controlled thickness of lining material on the interior of pail bodies. Instead of being sprayed on, the material is atomized and deposited by centrifugal force by the action of a spinning applicator head as the pail body is automatically elevated on the same axis as that of the revolving applicator (see accompanying photo). Among the advantages cited for this lining method are uniform lining thickness, freedom from foreign particles in the lining and absence of air bubbles and pin holes. The elimination of pinholing, says the supplier, is achieved because the process requires less solvent in the coating formulation than does spraying. Excess solvent, the company points out, can be trapped in the lining, causing air bubbles and subsequent pin holes. Further details are available from *Rheem Mfg. Co., Container Div., Linden, N.J.*



High-clarity, high-strength polyethylene

A polyethylene packaging film which is claimed to combine high strength with excellent transparency has been introduced by Du Pont. The printable and machinable film reportedly is the result of a technological achievement that uses "a radically different manufacturing process." In drop tests conducted by the supplier, the film (in 1.5-mil thickness) is said to have withstood 25% more drops than conventional high-impact films of the same gauge, and 150% more drops than other high-clarity films. Gloss-meter readings and haze readings show that the film has greater clarity than any presently available bag film, says the company. Suggested for use in the packaging of many products, including frozen foods, the film is reported to retain its properties down to a temperature of minus 60 deg. F. and to resist blocking up to 130 deg. F. Furnished in medium and high slip forms, the film is offered in gauges of 1, 1.5 and 2 mils. For further information, contact the supplier. *E. I. du Pont de Nemours & Co., Wilmington 98, Del.*

New line of impulse sealers

Weldotron has introduced new thermal impulse-sealing units whose simplified design is reported to put them in the price range of conventional hot-bar sealers. According to the supplier, these units utilize a rapid heating and cooling action to achieve optimum seals, with no skill required of the operator. Rapid heating is effected by pulsing a thin ribbon of high-temperature alloy with a high current for a brief time interval. After the heating current is shut off, the alloy ribbon's low thermal capacity results in a reversal of

[*Continued on page 186*]

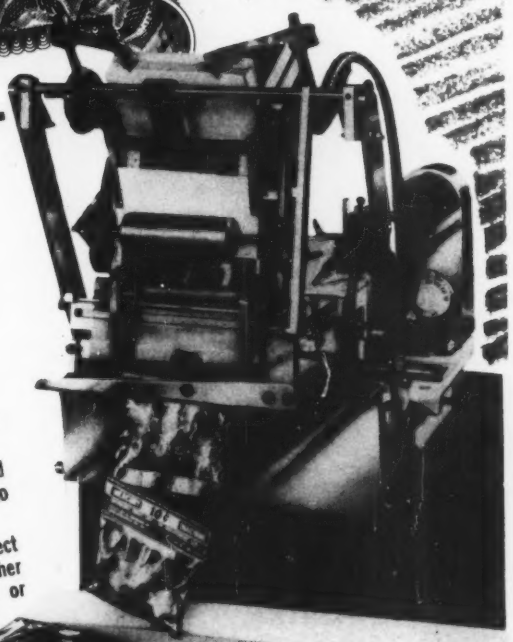
NO OTHER MANUFACTURER MAKES THIS OFFER

UNCONDITIONAL Guarantee 1 Year

Your VLS-12 BAG LABEL SEALER is guaranteed against any defect in materials and workmanship.

If any parts prove defective during the guarantee period they will be repaired or replaced free of charge if sent to the Mercury factory prepaid.

This guarantee does not cover any damage caused by neglect of lubrication, failure to clean, accident, or any other abuses; nor does it cover the cost of repair made or attempted outside of the Mercury factory.



MERCURY Label-Bag Sealer

With New Time Saving AUTOMATIC BAG EJECTOR

The Mercury VLS-12 Label Bag Sealer brings you all of tomorrow's advances, TODAY! With the new Bag Ejector, your finished package is safely and automatically released onto a conveyor or accumulating table. Less production costs . . . more economy, in the Mercury tradition!

- Safe, foolproof operation at high speeds
- Folds, seals saddle labels up to 10½" wide
- Available with Hole Punch, Date Coder
- New Automatic Price Imprinter

- Safe, foolproof operation at high speeds
- Folds, seals saddle labels up to 10½" wide
- Available with Hole Punch, Date Coder
- New Automatic Price Imprinter

MERCURY HEAT SEALING EQUIPMENT CO.

2601 N. HOWARD ST • PHILA. 33, PA.

M-2604

Why more and more packagers are switching to this

New Film That Can Take It...

made from Spencer "Poly-Eth" 2175 high impact resin:

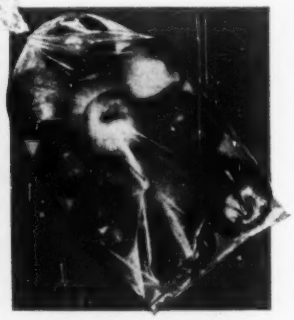
Important news for packagers is Spencer Chemical Company's development of "Poly-Eth" 2175 high-impact packaging resin. Already being used in a wide variety of packaging applications, "Poly-Eth" 2175 gives the impact strength needed for long shelf life and rough handling in shipment.

Ideal for drum liners, produce bags and other utility uses, film made from 2175 can be heat-sealed and color printed. Drawstrings can be attached. And "Poly-Eth" 2175 film can be easily heat-sealed to assure a liquid-tight package.

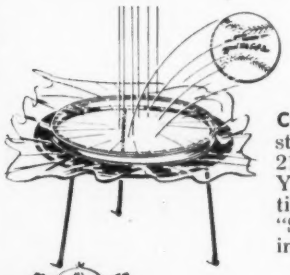
See for yourself how this new resin compares in impact strength with film you are now using. Ask your Spencer Representative for a demonstration.

Packaging speed tripled for Cotto-Waxo Co., St. Louis, they switched to drum liners made of super-strong "Poly-Eth" 2175 film. Made by Bemis Bro. Bag Co., St. Louis, the liners come in rolls, heat sealed at spaced intervals. Workers simply unroll the liners to perforated line above heat seal, tear off and insert in the drum.

Full protection, even after the package has been opened, is provided by this plant food bag made for Kilgore Seed Co. by Bemis Bro. Bag Co. Drawcord serves as handle and allows bag to be reclosed.



Tough enough to package produce, yet clear for display value, this bag was converted by Kleersight Plastics, Trenton, N. J. from "Poly-Eth" 2175 film extruded by Rafco Plastics, Garfield, N. J.



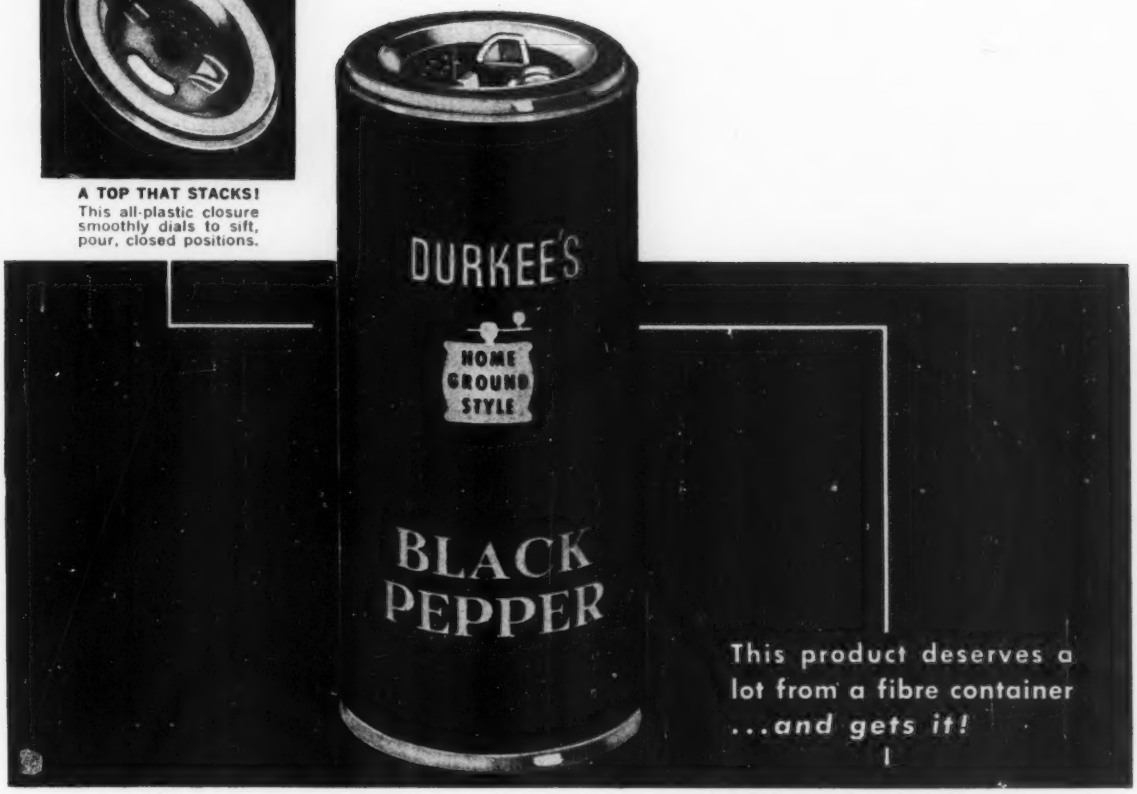
Compare the impact strength of "Poly-Eth" 2175 with other films. Your Spencer Representative will demonstrate this "Soft Ball Drop Test" in your office.

SPENCER **Poly-Eth Polyethylene**

SPENCER is also a prime supplier of
POLY-PRO POLYPROPYLENE
SPENCER NYLON

SPENCER CHEMICAL COMPANY, DWIGHT BUILDING, KANSAS CITY 5, MISSOURI

A TOP THAT STACKS!
This all-plastic closure smoothly dials to sift, pour, closed positions.



CLEVELAND CONTAINERS

may be designed to be as striking on a supermarket shelf as they are attractive in a homemaker's kitchen ...and this container combines beauty with utility and economy.

Progressive companies — like DURKEE FAMOUS FOODS — select a package that *sells* as it protects and serves.

Our Engineering Department will gladly help you design the ideal fibre container for your product. Ask them!

Durkee's new container for black pepper features:

Eye-catching design
Easy-grip size
Sturdy fibre construction
New stacking plastic top
Non-rusting bottom
Waterproof foil wrapper
...all at low unit cost!

Investigate the complete line of Cleveland Containers.

Write for our latest packaging brochure.

THE
CLEVELAND CONTAINER
COMPANY

6201 BARBERTON AVE. • CLEVELAND 2, OHIO

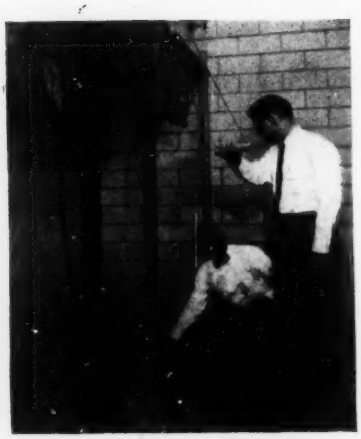
ALL-FIBRE CANS · COMBINATION METAL AND PAPER CANS
SPIRALLY WOUND TUBES AND CORES FOR ALL PURPOSES

CLEVELAND CONTAINER CANADA, LIMITED
Plants & Sales Offices: Toronto & Prescott, Ont. • Sales Office: Montreal

Plants and Sales Offices:
Cleveland
Detroit
Chicago
Memphis
Los Angeles
Plymouth, Wis.
Jamesburg, N. J.
Fair Lawn, N. J.

Sales Offices:
New York City
Washington, D.C.
Rochester, N. Y.
West Hartford, Conn.
•
Abrasive Division at Cleveland

FLY IT!

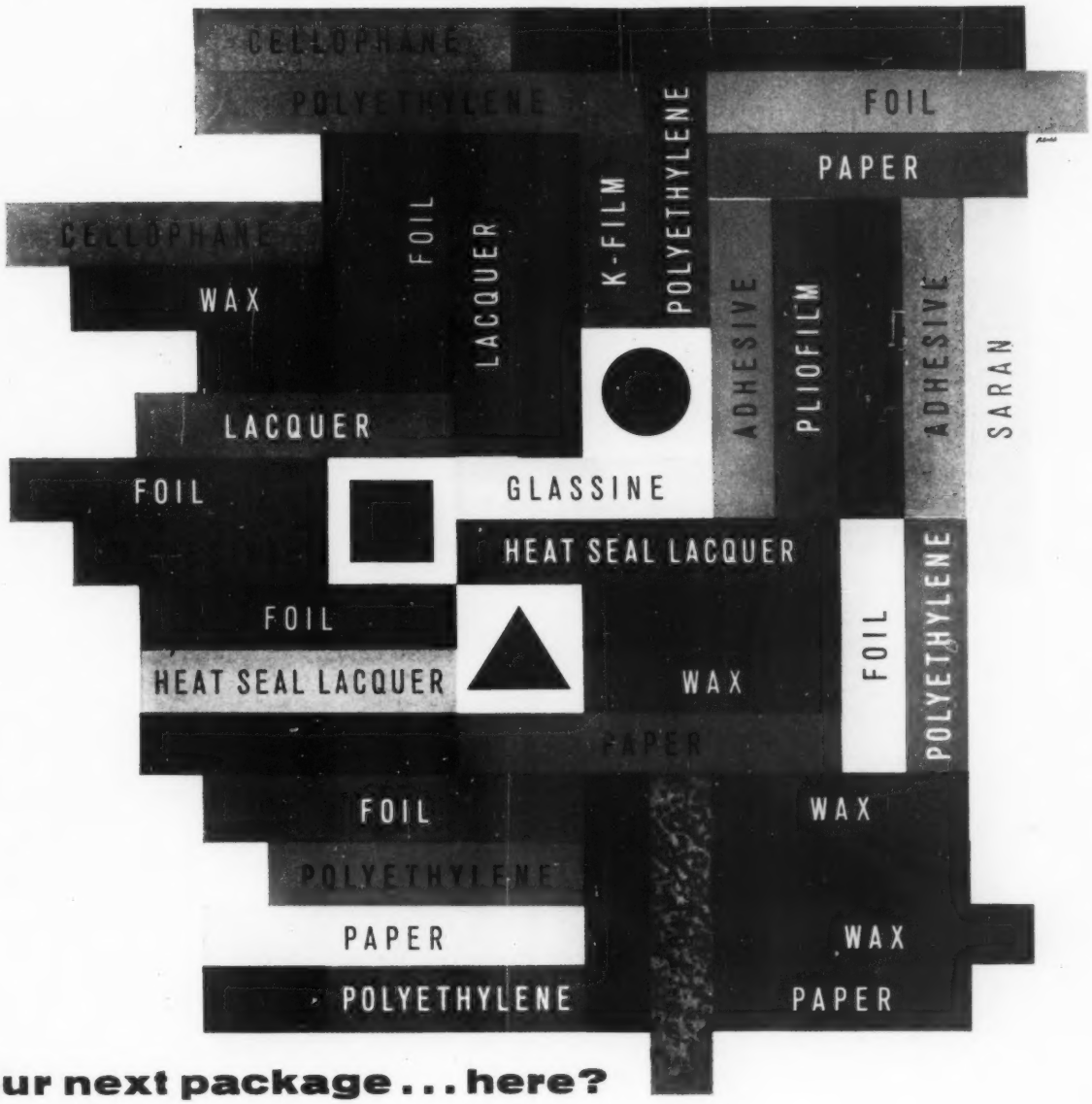


Fly a kite in the worst of winds . . . punish a multiwall bag every way you know. When they're made of West Virginia's Kraftsman paper they stand up better! Our quality control program is really tough; it covers everything from the virgin pulp to end-use applications.

Take that drop test illustrated at the left. Sample multiwalls, made to exact specifications, are dropped to measure their bursting point. It's only one of dozens of tests to insure the uniformity and strength of Kraftsman kraft.

For information about this better kraft paper, call or write: Kraft Division Sales, West Virginia Pulp and Paper Company, 230 Park Avenue, New York 17, New York.

West Virginia Pulp and Paper



Your next package . . . here?

Yes, here! A Milprint custom combination of two or more of these materials can give your product better protection and more sales appeal with economy of cost. Pioneer in flexible packaging, Milprint approaches your package problem with an open mind. There's no attempt to steer you toward any particular material or process because *Milprint offers you the widest variety available anywhere.*

Give your next package the advantages of unlimited choice of materials, printing processes and experience which is uniquely Milprint. Use our nationwide network of research, design and production facilities and you'll agree . . .

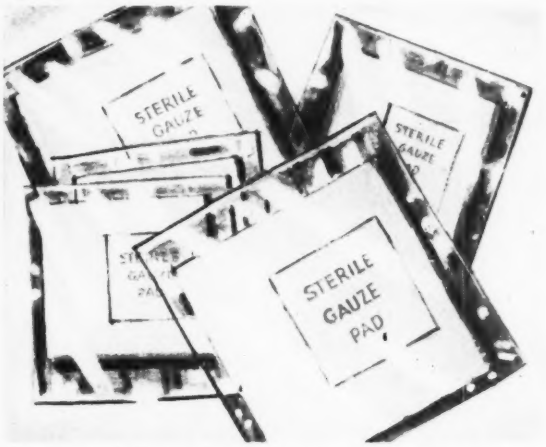
MILPRINT PACKAGING MARKETING POWER

MILPRINT Inc., World's Most Imaginative Flexible Packaging Service, General Offices, Milwaukee, Wis., Sales Offices and plants conveniently located across the nation.

Sealed-in freshness! Escon polypropylene, brilliant see-through wrapping, helps seal in freshness thanks to its low moisture vapor transmission. Its excellent handling qualities make it ideal for high-speed packaging.

Long shelf life! When used as an overwrap, Escon contributes to long shelf life of candy, cookies, cigarettes and other semi-perishable products. Its brilliant transparency adds eye-and-buy appeal.

Good show! Escon clear packaging film shows the product at its natural best. Since it can be color printed on either or both sides, Escon provides an opportunity for attractive packaging design of many items.



Heat resistance! Escon-packaged gauze pads and other medical dressings can be sterilized by autoclaving. Can Escon's high heat resistance give you the opportunity to add "sterile" to your product label?

Escon® POLYPROPYLENE HELPS ADD

Escon film can give your product maximum sales appeal. And no wonder – Escon makes a packaging film of extreme clarity, uniform quality and high surface gloss.

ENJAY
PLASTICS

Escon can be extruded into flat film using either the water bath or chill roll technique. It offers the packaging engineer many advantages including good vapor barrier properties plus greater heat resistance than any other polyolefin.

Escon clear film can be color printed – and reverse printing adds sparkle to the package. Escon also exhibits a wide heat

THE PRODUCT TO HER BUYING LIST

sealing range that allows the packager to vary the degree of seal from a light "tack" to a strong weld.

The modern technical service laboratories of the Enjay Company can help you produce attractive packaging through efficient use of Escon polypropylene.

For technical assistance or to order Escon, contact the nearest Enjay office: (Home Office) 15 West 51st St., New York 19, N. Y. (Other Offices) Akron • Boston • Charlotte • Chicago • Detroit • Houston • Los Angeles • New Orleans • Tulsa • Toronto.

EXCITING NEW PRODUCTS THROUGH PETRO-CHEMISTRY

ENJAY CHEMICAL COMPANY

A DIVISION OF HUMBLE OIL & REFINING COMPANY

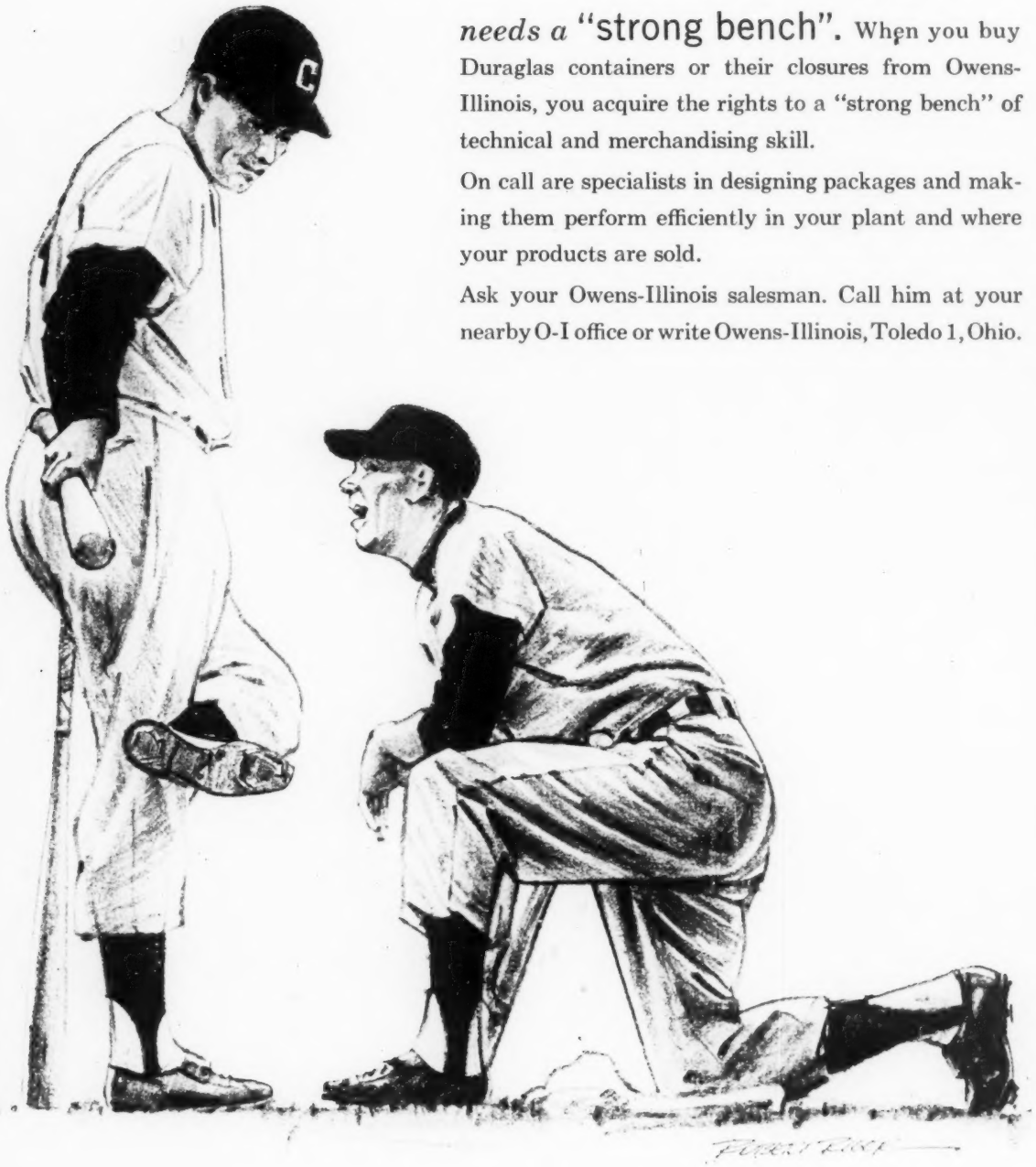
ENJAY
PLASTICS

A winning team

needs a **"strong bench".** When you buy Duraglas containers or their closures from Owens-Illinois, you acquire the rights to a "strong bench" of technical and merchandising skill.

On call are specialists in designing packages and making them perform efficiently in your plant and where your products are sold.

Ask your Owens-Illinois salesman. Call him at your nearby O-I office or write Owens-Illinois, Toledo 1, Ohio.



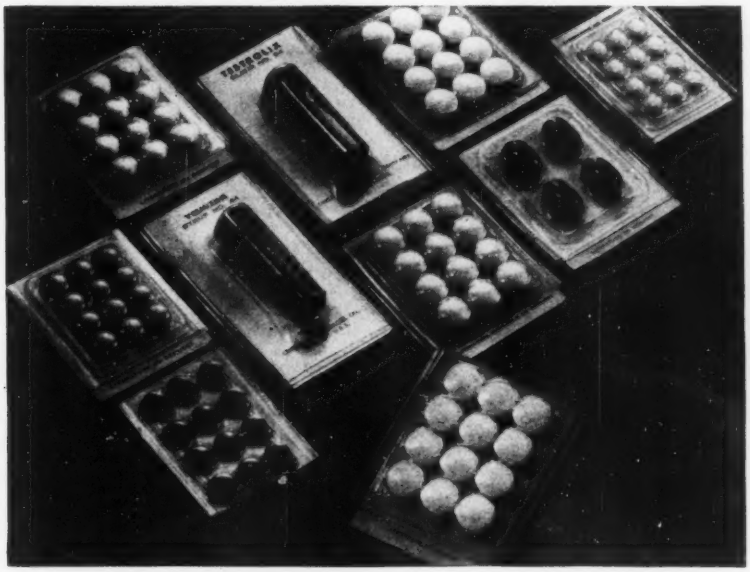
DURAGLAS CONTAINERS
AN (O) PRODUCT

OWENS-ILLINOIS
GENERAL OFFICES • TOLEDO 1, OHIO
PACIFIC COAST HEADQUARTERS • SAN FRANCISCO

CAMPCO

Plastic Sheet and Film

some practical IDEAS for its use in PACKAGING



How to add sales appeal to a product with packages of Campco Thermoplastic Sheet

A good package has three qualities. It protects the product. It provides good display. And presents the product most favorably with a full measure of sales appeal, eye-appeal, buy-appeal.

Good design is, of course, the starting point. But without the right material, good design can be wasted. The selling power of a package must rely upon the hidden qualities of the material . . . strength, clarity, moisture-resistance, dimensional stability.

Campco has developed materials that can provide the exact qualities and characteristics needed for your package. Here are a few examples of successful packages made from Campco Thermoplastic Sheet.

Household Products

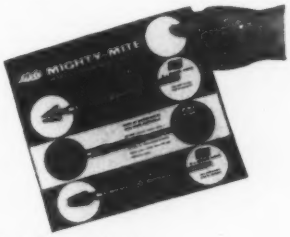
Here are excellent examples of proper packaging of products that must sell themselves. These commonplace items are given glamour. Their value and usefulness can be quickly seen. The Faucet Strainer is blister-packed in Campco A-130 Acetate, .0075 gauge. The Suction Hooks, Faucet Aerator and Bathroom Deodorizer are packaged in Campco A-130 Acetate, .010 gauge. Both the Strainer and the Aerator show through either side of a die-cut card. All of these items were packaged for Stanley-Oliver Manufacturing Corporation by Makatoy Company, Chicago. These items, distributed through rack jobbers in chain stores, hardware and department stores, have increased sales 3 to 4 times over sales of the same items in bulk form.

Pharmaceutical Products

The photo at left shows part of a complete line of ethical drugs offered in handy slide packs thermoformed from Campco B-120 Acetate Sheet. These items, prosaic in themselves, take on an added attractiveness when enclosed in this brilliant, transparent sheet. Vacuum-formed by Plastofilm, Inc.

Industrial Sales Demonstrator

The problem here was one of providing the proper means of displaying samples of Crane Company's vitreous enamel colors to a prospective buyer. In this attractive cardboard case, the samples are placed in an insert made from Campco S-540 High Impact White Styrene which provides a proper setting for Crane's color samples and keeps them in place.

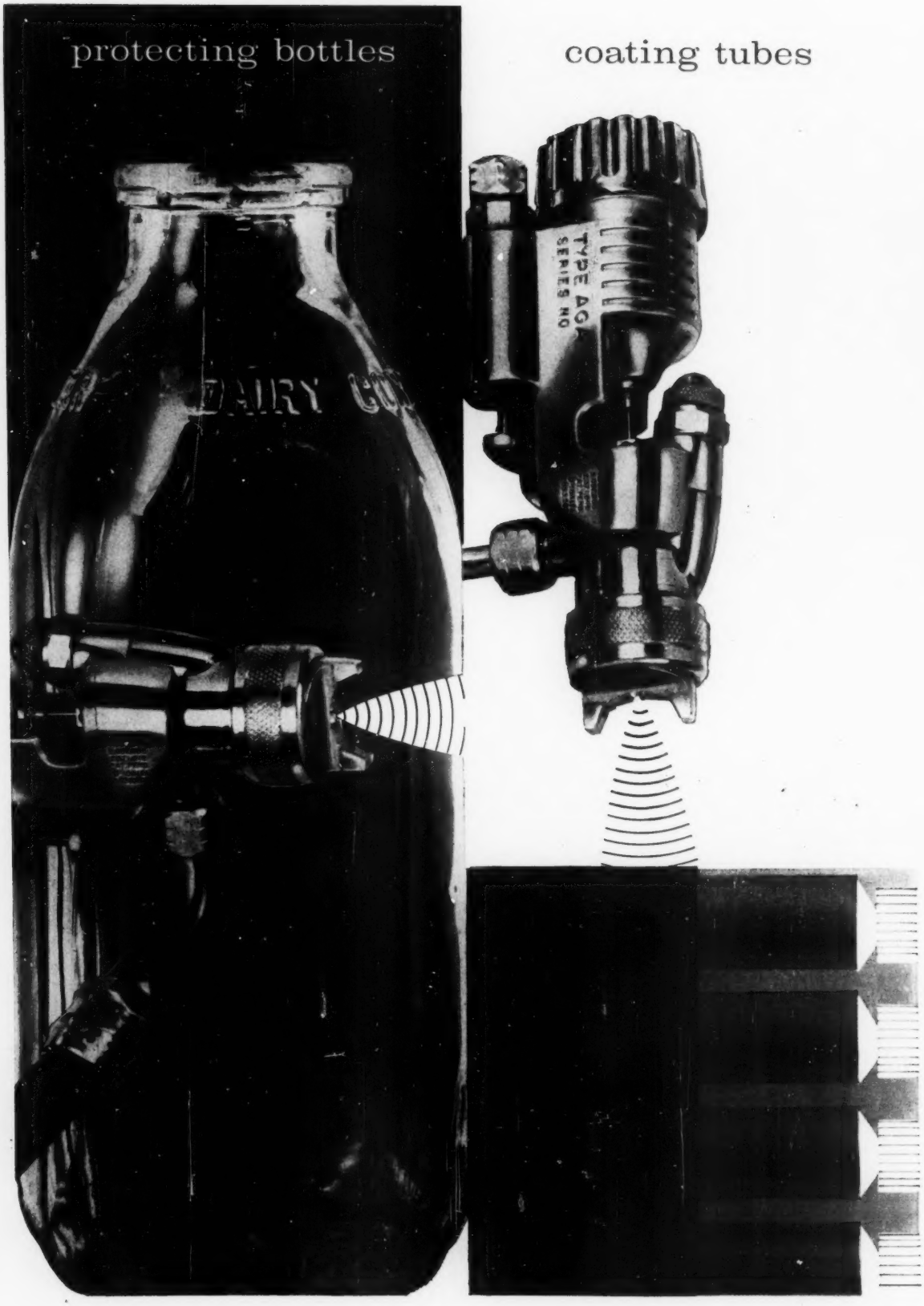


Industrial Product

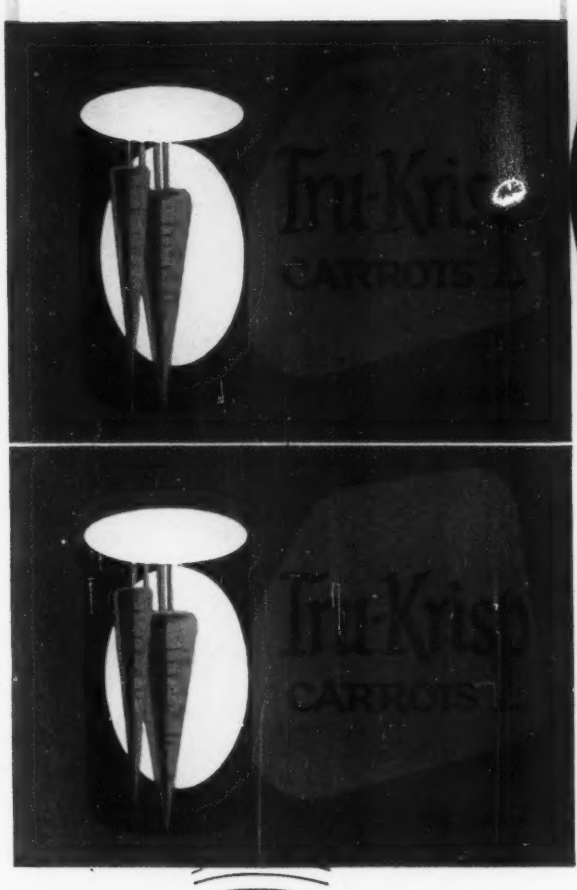
These Lisle Brake Cylinder Hones were formerly packaged in cardboard boxes. This multiple-item card, skin wrapped, was designed for Lisle and formed by Hutcheson Displays, Inc., of Omaha, Nebraska. The display value and sales appeal are apparent. Each brake hone is on a perforated card that can be torn off for single selling.

Received Your Campco Packaging Data File? This data-packed reference file on thermo-plastic sheet and film is yours on request—just send name and address on Company letterhead to Campco, 2717 A Normandy Ave., Chicago 35, Illinois.

CAMPCO Sheet and Film, **a Division of Chicago Molded Products Corp.**


protecting bottles
coating tubes
TYPE AC
SERIES NO.

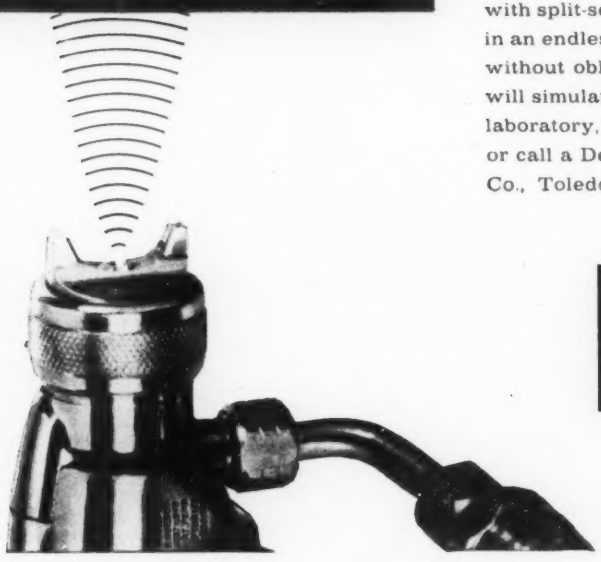
skidproofing cartons



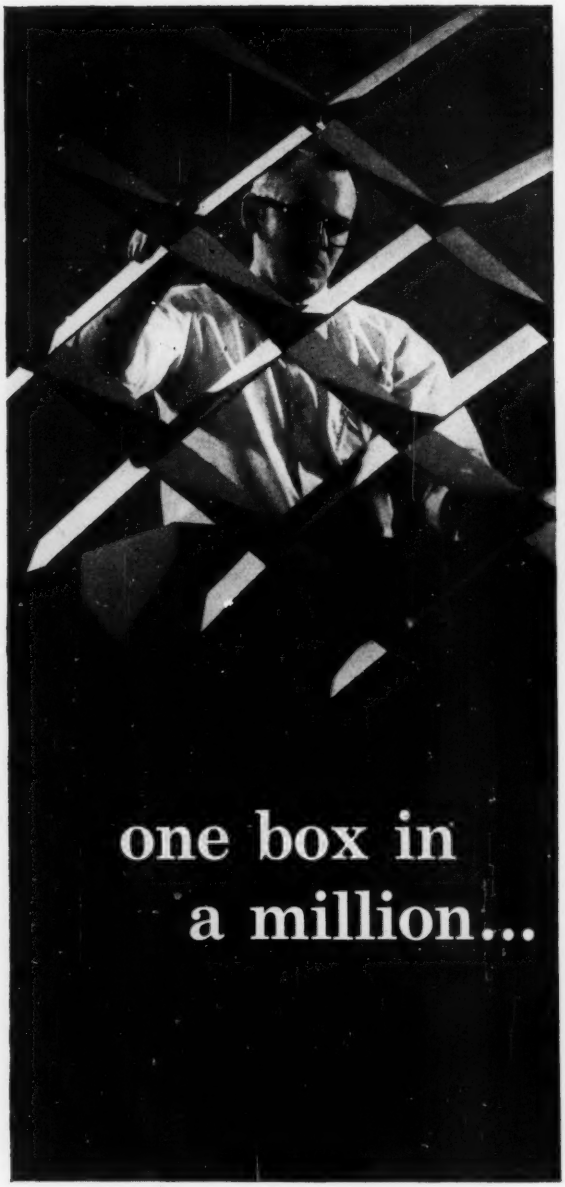
stenciling barrels

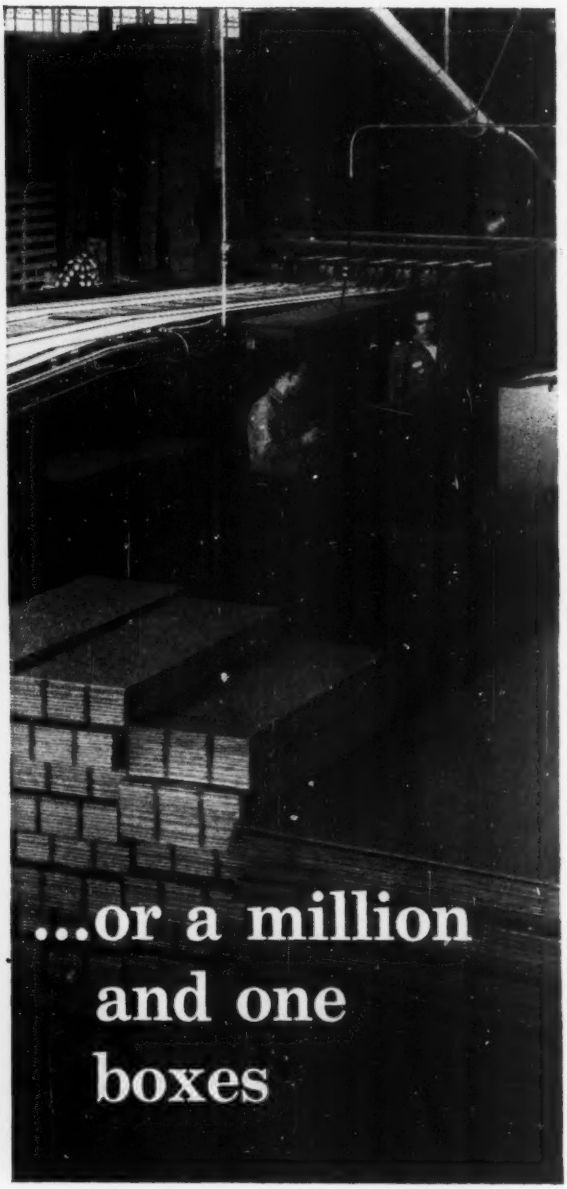
Do it automatically with DeVilbiss spray

Apply surface-protective films, paints, plastics, and adhesives . . . spray vitamin solutions, wax emulsions, edible oils, flavorings, water mists, color codings. DeVilbiss automatics apply exact amounts of material, evenly, over specific areas with split-second timing to reduce packaging costs in an endless variety of ways. Let us demonstrate, without obligation, how they'll work for you. We will simulate your operation in our fully equipped laboratory, let you see actual results. Write us, or call a DeVilbiss representative. The DeVilbiss Co., Toledo 1, Ohio. Offices in principal cities.



FOR TOTAL SERVICE, CALL
DEVILBISS





Perhaps you need a completely new type of corrugated package, for a product that requires ingenious container design. If so, you'll benefit from Hinde & Dauch's *creative approach* to package engineering. Or maybe you use standard shipping boxes in great quantity. In that case, you can count on H & D's large volume capacity—more than six billion square feet per year—to keep you supplied for uninterrupted production.

Hinde & Dauch Division

West Virginia Pulp and Paper

HINDE & DAUCH DIVISION, WEST VIRGINIA PULP AND PAPER, SANDUSKY, OHIO • 17 PLANTS • 42 SALES OFFICES

Sounding Board

WE ASK THE READERS

What is the best way to test market a new package?

E. Gunderson, *Production Coordinator, Regal Pale Brewing Co., San Francisco:* To begin with, we combine tests and investigations by experts, such as the Stanford Research Institute, to find out what packaging should sell our product best with various surveys and check-ups by our design advisers, the Walter Landor organization, to find out how well such packaging should go over with our particular consuming public. Then we use our own sales staff to check it out and to find out what the results may actually look like in the retail stores, as well as in the eyes of the purchasing and consuming public.

This latter phase, which we do ourselves, is carried out by selecting about five or six retail outlets in each of four or five test-marketing areas. The proposed new package or the old package with the proposed new label (we have had both types of change in the past few years) will be located alongside the existing item in the grocers' displays or the liquor-dealers' shelves. We try to make sure that the retailer does not prejudice the results by providing different space, location, lighting, sign play, etc., for the two displays and that he does not separate them from one another.

The final test then comes in counting how many of each are bought during each part of the test period in each location. We not only record the details of the sales comparison, but also make a note of any comments which the dealer can report to us—comments by purchasers, by non-purchasing customers in his store, by other delivery personnel (competitor or other products), by anyone else whose comment he can either recall or note down for us.

We consider the combination of all these phases as our pre-test or test marketing of a new package or an old package with a new label. Our board of directors then has some sound material on which to base a decision about adopting the new package either as an addition or as a substitute for the existing line.

R. F. Gundlach, *President, Terry Candy Co., Elizabeth, N. J.:* First, I would like to say that packages are always in need of change, even if you think they are the best in the world. Otherwise you are standing still. We are always revising the print or the color scheme or the size. However, we'd never change our package drastically, because people are looking for that old package and if you have created a certain amount of good will, you don't want to lose it.

In testing a new package, I would try an area where we had good sales figures and good distribution, but I would not go into any large metropolitan area like Boston, New York or Philadelphia. I would probably try an area like Buffalo or St. Louis, or some city where there would be less metropolitan influence.

Secondly, I would withdraw the old package completely from the test area and only use the new package. For our product, candy, I would test during the busy season from September to March, or maybe even let the test extend into May.

I would not give it any more promotion than ordinary and certainly would not inform the public that the package on display is a new package.

I would check frequently with the buyers and take a cross section of several superintendents of stores, and get their opinions. I would ride around and ask these men what comments, if any, they were getting from consumers on the new package.

I would check the sales figures against every other area. I suppose if sales went down, you might not know anything; if sales went up, it might give an indication of the effectiveness of the package. If there was a big upswing, it might prove your point.

Richard Campbell, *Vice President and General Manager, Baltimore Brushes, Inc., Roxbury, Mass.:* There is no easy, concise answer to this question.

Hand samples of a package are shown to a wide group of merchandising men, sales personnel, clerks, and their opinions are collected and evaluated. Any resulting changes are made and resubmitted to more customers in different distribution areas. Again comments are evaluated and changes made. Resubmitted for the third and final time, and results evaluated. Production authorization is then granted. After the first production run, the package is again revaluated before we go ahead with the next production run.

James W. Williamson, *Secretary, Duquesne Baking Co., Inc., Pittsburgh:* The best way to test market a package, in our case, is by showing the package to our 125 employees and obtain their reactions. The reactions can be ascertained in a meeting or a series of small group meetings, having the employees give their verbal opinions and having a recorder list their replies, or by having them turn in a written report on their opinions and why they feel as they do about the package.

Another good way is to have a resource test market a package or conduct a [*Continued on page 229*]

FDA Approves Pro-fax® for Food Packaging Use

Pro-fax polypropylene has been approved by the Food and Drug Administration for use in products coming into direct contact with all kinds of foods. The formal regulation authorizing the use of Pro-fax 6420 (for film) and Pro-fax 6513 (for injection-molding and general purpose extrusion) in food packaging appeared in the Federal Register on Saturday, April 16, 1960. Pro-fax thus becomes the first packaging material to win approval through the issuance of a formal Food Additives regulation.

This action clears the way for you to immediately utilize the many advantages of Pro-fax in such uses as packaging films, rigid containers, closures, coatings, liners, and dispensers for food handling.

The petition submitted by Hercules in winning acceptance for Pro-fax is looked upon by the industry as a model because for the first time it establishes a *legal specification* for a food packaging material. It is therefore expected to serve as a guide to producers of other packaging materials seeking FDA approval for their products. It represented a unique effort by a closely knit management team, which included personnel in Product Development, experts in the Hercules Medical and Legal Departments, and research specialists in analytical chemistry and testing techniques.

Once more Hercules leads the way in the development, production and marketing of polypropylene. Pro-fax, America's first polypropylene, is first with FDA approval. The formal regulation was issued as a result of FDA's evaluation of Pro-fax data submitted in the Hercules petition. The regulation sets out the legal specifications for polypropylene in contact with food. You eliminate all doubts and play safe when you design your new food packaging requirements around Pro-fax, because there can be no question that Pro-fax is covered by the FDA order.

Pro-fax is a superior, low-cost container and barrier material. Pro-fax films combine exceptional strength with excellent clarity, resistance to heat, chemicals, and moisture. They are adaptable to hot-filling, are heat-sealable, highly resistant to fatty foods, and can be sterilized safely at temperatures up to 275°F. Pro-fax, both in film and injection-molded form, is already widely used in packaging in a variety of non-food applications.

Only Pro-fax is both *proved* and *approved*. Specify Pro-fax *now* for your food packaging requirements. We'll be glad to help with your product planning. Call or write:

HERCULES POWDER COMPANY

CP60-10

Wilmington 99, Delaware

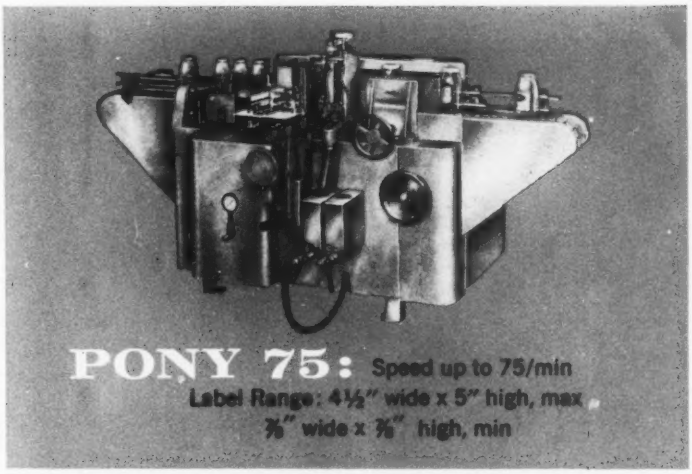
PAY LESS... SAVE MORE WITH PONY LABELERS

...all with exclusive suction label handling

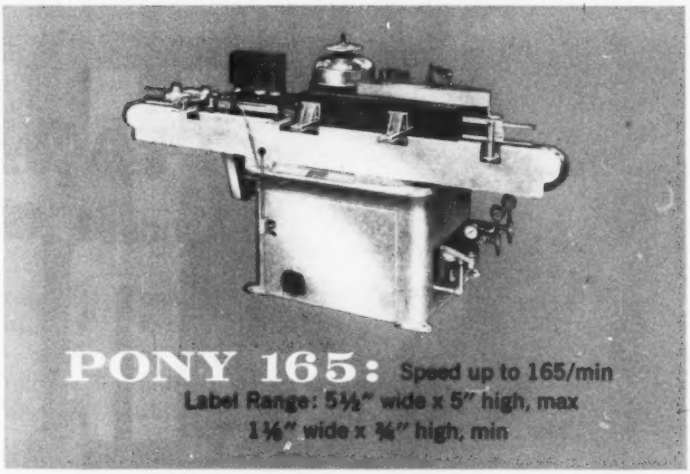
The straight line roll-away bottle handling principle used in these automatic PONY LABELERS makes it possible to offer extra speed at low cost, together with suction label handling to achieve quality labeling!

Each of these Ponies also provides shockless feed-screw bottle metering, line-contact rolling pressure, micro-control circulating glue, and circulating self-cleanup.

For full information, write for new PONY LABELER BULLETIN



PONY 75: Speed up to 75/min
Label Range: 4½" wide x 5" high, max
⅜" wide x ⅜" high, min



PONY 165: Speed up to 165/min
Label Range: 5½" wide x 5" high, max
1⅛" wide x ⅜" high, min

PONY 300: Speed up to 300/min
Label Range: 5½" wide x 5" high, max
1⅛" wide x ¾" high, min

MAKERS OF THE PONY LABELRITE · NJM · NEW JERSEY MACHINE CORP

NEW JERSEY MACHINE CORPORATION
AUTOMATIC LABELING • CARTONING AND PAPER BOX MACHINERY

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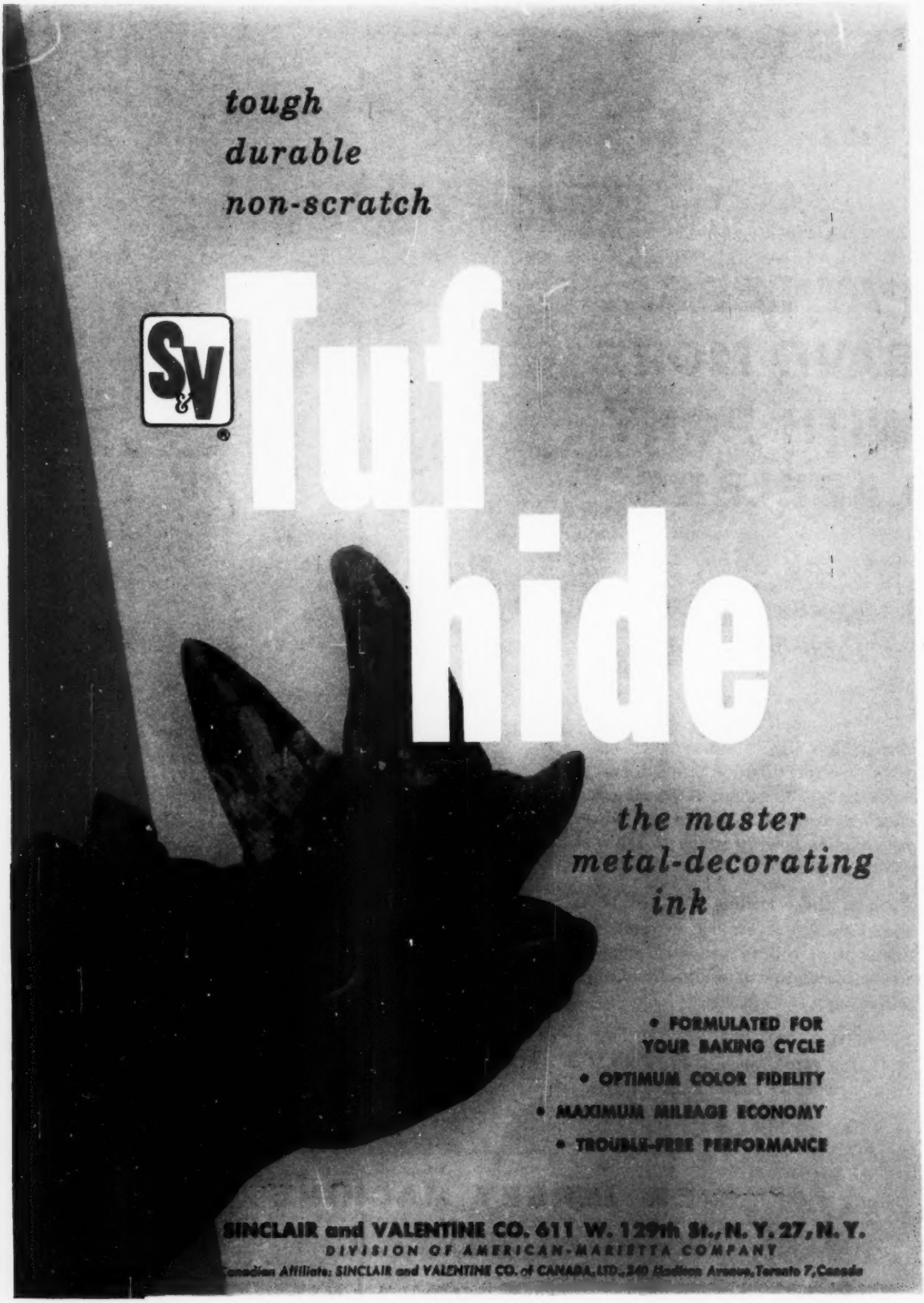
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DIVISION OF AMERICAN-MARIETTA COMPANY
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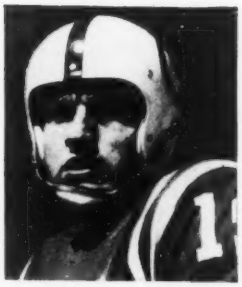
EXPANDA-KRAFT (newest, high-strength H&W extensible kraft) stops a Johnny Unitas pass



Johnny Unitas, all-pro quarterback, throws fast, hard and straight. We asked Johnny to help us demonstrate the strength and resilience of Expanda-Kraft. He had two targets: regular multiwall kraft and Expanda-Kraft. Each target had four plies of 50-lb. stock. The speeding pigskin ripped through regular kraft, but time after time it bounced off Expanda-Kraft. The picture shows where the ball left dents in the Expanda-Kraft.

Expanda-Kraft, made by a new roll-crepe process, withstood the terrific impact of these Johnny Unitas bullet passes. It's tough and moisture resistant. Expanda-Kraft may be just what you need for specialized wrappers, multiwall bags, laminations, linings, backings or protective packaging. It's available in 40, 50, 60, 70 and 80-lb. basis weights. Use the coupon for more information.

Consider these Expanda-Kraft features:

Reduces breakage It has two-way stretch. Soaks up shocks that would break ordinary kraft of equal basis weight.

Withstands moisture—Weathering and high humidity have little effect on Expanda-Kraft. It stays tough. Firm.

Prints sharp—Its attractiveness increases your product's sales appeal. Expanda-Kraft White is unusually bright and takes fine printing beautifully. Semi-bleached and Natural Shades do, too.

HOLLINGSWORTH & WHITNEY DIVISION OF
SCOTT PAPER COMPANY

Dept. MP-3, Chester, Pa.

Please send information about Expanda-Kraft extensible paper. I have this application in mind:

Name

Firm Title

Address

City Zone State

SAFEGUARD YOUR PRODUCT IN EXPANDA-KRAFT*

*T.M. Scott Paper Company

Fresh-Pact
BRAND
PREMIUM QUALITY
GREEN PEAS
WT 1 LB. 4 OZS.
PICTSWEET
GOLDEN SWEET CORN
NET WT. 1 LB. 4 OZS.
WESTPAC
Shelled at the Plant
GREEN PEAS
2 FULL POUNDS
KEEP FROZEN
2 LBS. NET WT.
BIRDS EYE
Quick Frozen
GREEN PEAS
CONTAINS SLIGHT AMOUNT OF SALT
2 lbs.
NET WEIGHT . . . 10-12 Servings
Stokely's
2 FULL POUNDS
NET WEIGHT
FLAV-R-PAC
Golden Sweet Whole Kernel
CORN
U.S. GRADE A FANCY
2 FULL POUNDS
KEEP FROZEN
2 LBS. NET WEIGHT
U.S. GRADE "A" FANCY
Libby's
SWEET
PEAS
KEEP FROZEN
ECONOMY PACKAGE
NET WEIGHT 1 LB. 8 OZ.
EACH KERNEL INDIVIDUALLY FROZEN
POUR OUT WHAT YOU NEED
STORE THE REST
Bel-air
Premium Quality
Whole Kernel
2 LBS. NET WT. golden corn

Frozen foods now go to market bagged in film of **TENITE POLYETHYLENE**

Pollock Paper Company, *division of St. Regis Paper Co., using Tenite Polyethylene, supplies bags like these to package individually quick frozen foods — a new development that's spurring frozen food sales.*

Transparent packaging of individually quick frozen food—known to the trade as IQF—is a giant step forward in frozen food merchandising.

IQF foods are not frozen into a solid block. Instead, each piece is individually frozen *before* packaging. Thus, housewives can buy IQF packages (usually one and one-half to two pounds) and pour out just the amount needed for a meal. Retailers benefit through larger unit sales; processors, through the economy of a simpler packaging operation.

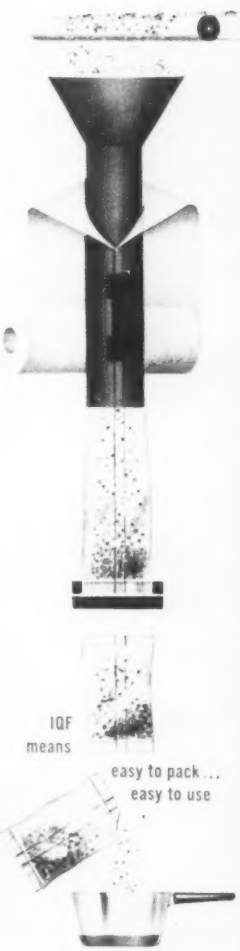
Bags were chosen for IQF foods so that the user would have the convenience of a package that could be reduced in size as the contents were consumed. For the bag material, processors turned to film of Tenite Polyethylene. This Eastman plastic has proved ideally suited to the demands of the job.

The film is strong, tough and flexible, and retains these qualities at below-freezing temperatures. Its performance on automatic filling machines reduces operating problems to a minimum. Strong seals, obtained with low sealing temperatures, increase package durability in shipment and in self-service cabinets.

Extruded on special equipment to assure accurate control of thickness, the film is supplied by Pollock in both bag and roll form to leading frozen food processors. These users report that it cuts costs by making possible unusually efficient machine operation with fewer broken bags.

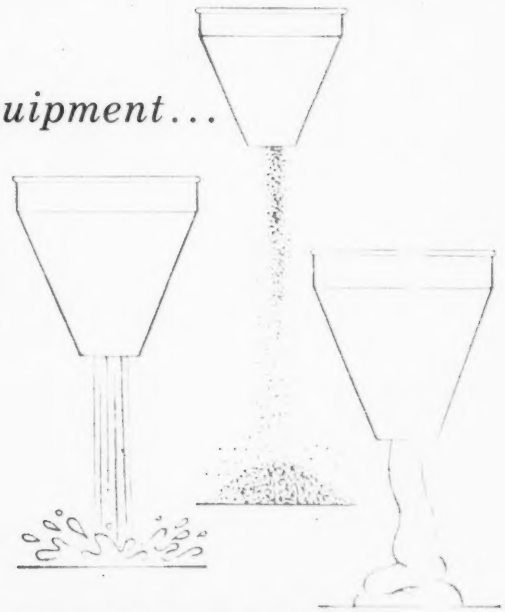
For more information on the use of film of Tenite Polyethylene for frozen foods, write Pollock, or EASTMAN CHEMICAL PRODUCTS, INC., subsidiary of Eastman Kodak Company, KINGSPORT, TENNESSEE.

TENITE®
POLYETHYLENE
an Eastman plastic



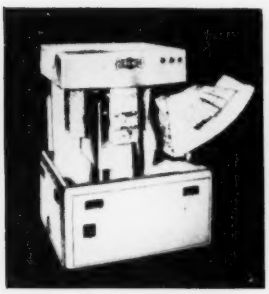
Film for frozen food bags extruded from Tenite Polyethylene by Pollock Paper Company; general offices, Dallas, Texas. Plants and sales offices located coast to coast.

In filling and packaging equipment...

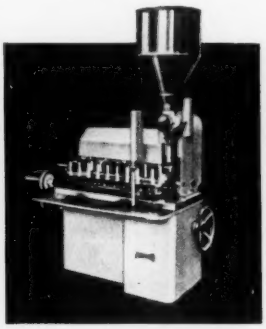


THERE'S ONLY ONE THING FINER THAN SWEDISH CRAFTSMANSHIP

That's Swedish craftsmanship plus prompt U.S. service! And that's what you get in each and every Arenco machine. Performance that is second to none, backed by the service only fully stocked warehouses and skilled specialists can provide. For complete details, write Arenco: one of the most dependable names in filling, packaging, proportioning, closing, sealing and check-weighing equipment.

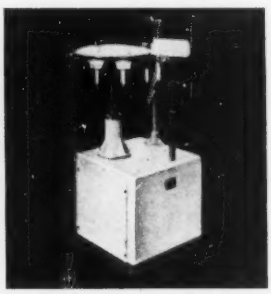


VUF automatically feeds and opens as many as 2100 bags an hour, can serve three combination weighers or portioning machines at one time. Synchronized controls maintain best filling speed, eliminating no-fills or double portioning of hard-to-handle materials. Opens each bag before filling. Handles sizes from 2½"-6¼" wide to 8⅝"-15⅛" high. Quick changeover for biscuits, breakfast cereals or granular products.



GAB automatic tube filling and closing machine packages liquids, semi-liquids and stiff pastes at speeds as high as 3000 an hour. Complete filling, with no air bubbles or pockets. "No-tube, no-fill" efficiency. Takes tubes up to 1½" in dia., 7¼" in length, 1¾"x8" on special order. Tube-cleaning, cap-tightening, blow-off and coding device standard equipment.

GAN, "big brother" of the GAB, fills and closes up to 7000 units an hour with one operator. Automatic tube feed, photo electric tube register and dual filling nozzles. Tube discharge can be tailored to virtually any cartonning set-up. Handles tube diameters up to 1½", lengths to 7¼". Like GAB, fast changeover from size to size, product to product.



GAP heat sealer works well in combination with the GAB . . . enables you to seal perfectly packages of either polyethylene or p.v.c. plastic. Easy to hook up to the parent machine. And on the GAP, precision thermostats maintain proper sealing temperatures for whichever plastic material you work with, whether production is long-run or short.

ARENCO

ARENCO MACHINE COMPANY
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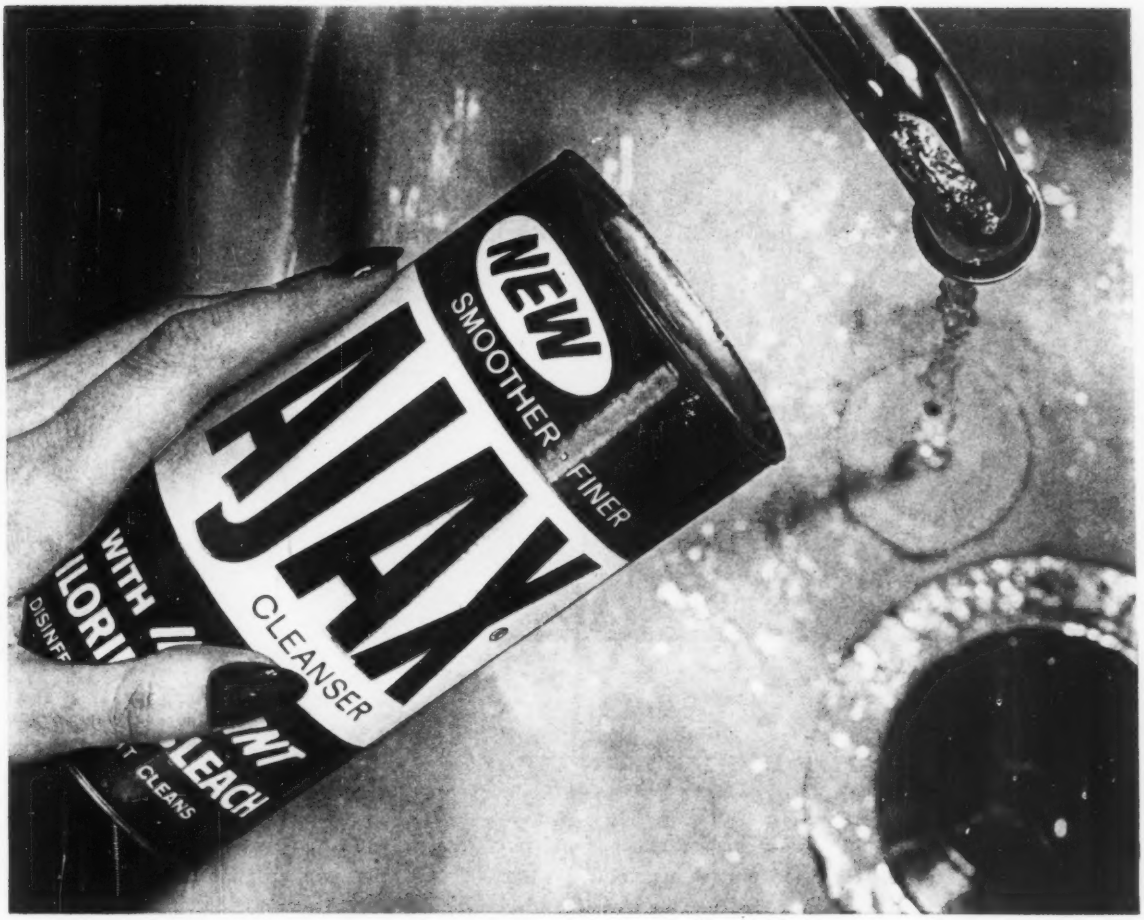
25 West 43rd Street, New York 36, N. Y.

Another FOIL packaging success with ANACONDA ALUMINUM . . .



ANACONDA ALUMINUM FOIL helps keep Ajax Cleanser dry, fast-flowing... fast-selling

Ajax Cleanser lives near water—works in water—gets carried by wet hands. So, the **Colgate-Palmolive Co.,** New York, insists upon protective packaging for this fine-textured product that must be dry and free flowing.

Lustour Corporation, St. Louis, prints the moisture-proof label, a lamination of aluminum foil and kraft paper. This label, which becomes an integral part of the canister, both keeps out moisture and stands up under wet handling.

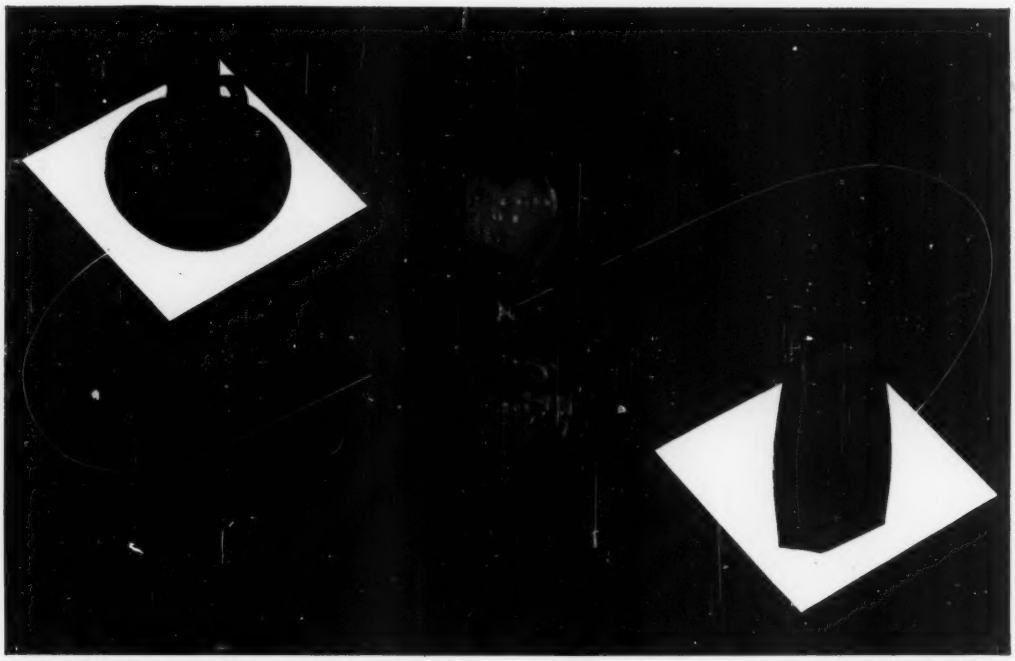
This colorful foil wrapper does another big job, too. It sells hard in supermarkets because the reflective aluminum foil brilliantly displays the famous Ajax name.

To find out what hard-working foil packaging can do for your product, call your nearby Anaconda Aluminum representative. And for details about all our products and facilities, send for our new booklet, *"This is Anaconda Aluminum"*. Write Dept. ML-9, Louisville 1, Kentucky.

When you buy foil for packaging or printing, remember . . . every industry has one member who specializes in customer satisfaction

ANACONDA ALUMINUM

ANACONDA ALUMINUM COMPANY • GENERAL OFFICES, LOUISVILLE, KENTUCKY



PAST, PRESENT AND FUTURE

in transparent film packaging . . . tremendous experience amassed over the years, and continuous research today, enabling us to lead the way in new development — these are the factors that guarantee you the most knowledgeable, most useful opinion on your own particular packaging problem. Do you want advice on the transparent packaging film that will suit your product best? We have scientists and technicians, the foremost in their field, to help you select the appropriate one. They may suggest cellulose film in one of its many types. Perhaps you may need BCL polythene film. Or your product may be an 'awkward' one — something you thought could never be packaged visibly . . . like a liquid, a cream or paste, a powder; acid, alkali, grease, salt; a heavy, sharp article. In this case we should probably recommend polythene-coated cellulose film or one of our new plastic films.

Contact us now for further details and samples of our films. And if you need practical help to use them to best advantage, we are ready and keen to co-operate with you.

BCL

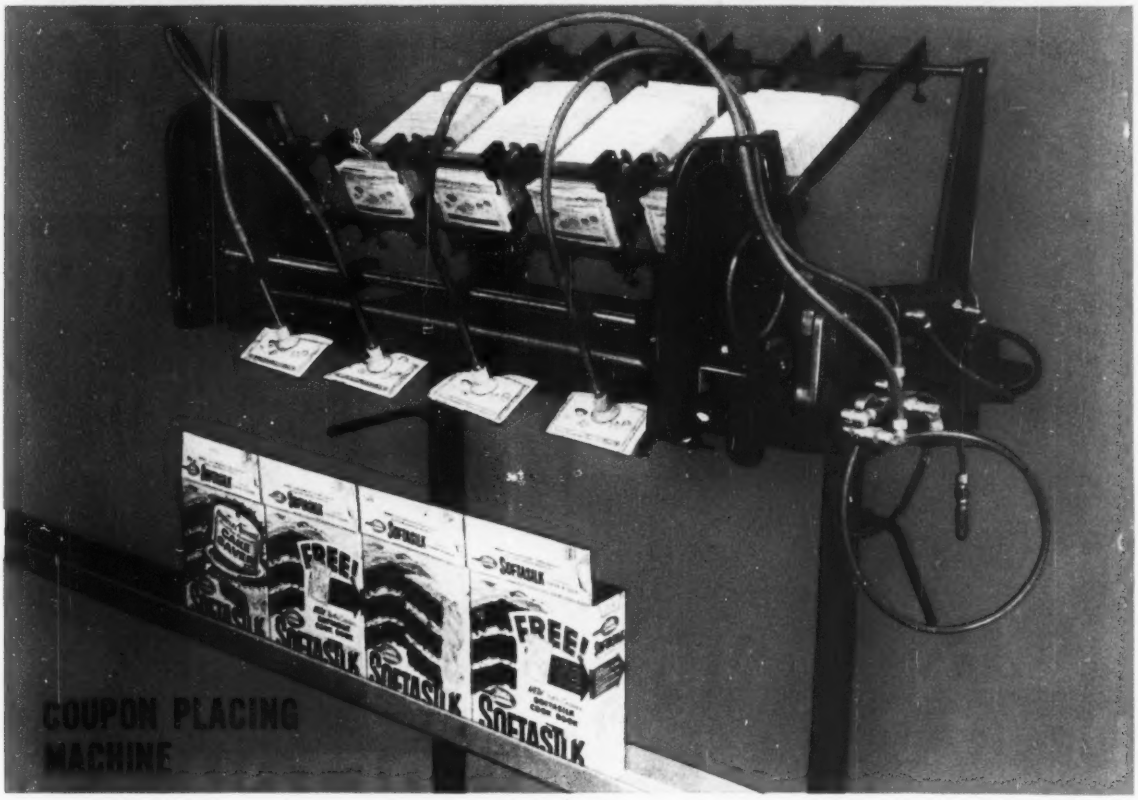
BRITISH CELLOPHANE LIMITED

Henrietta House, 9 Henrietta Place, London, W.1, England

'Cellophane' is the registered trade mark of British Cellophane Limited in the following countries: U.K., Jersey and Guernsey, Commonwealth of Australia, Ceylon, Cyprus, Denmark, Eire, Federation of Malaya, Federation of Rhodesia and Nyasaland, Gibraltar, Hong Kong, Iceland, India, Jamaica, New Zealand, Pakistan, Singapore, Trinidad and Tobago, Union of South Africa.

photo-data sheet

One of a series of **PACKAGING SUCCESSES** *by* **Thiele Packaging Machinery Company**



Problem: To eliminate missed packages when inserting coupons, booklets, premiums and other light flat objects into containers.

Solution: Thiele developed a coupon placing machine that actually places the insert inside the container – rather than dropping it into position.

Results: Average reported efficiency for standard machine is 99.43%. Efficiency is unaffected by coupon folds or by reversal of coupons in supply hopper.

Locations: General Foods Corporation, General Mills, Inc., Pillsbury Mills, Inc. and other food and drug companies.

Speed: *(inserts per minute)*

1 Head – 70	3 Head – 150
2 Head – 120	4 Head – 180

Accuracy: A recent test involving counting operations showed machine accuracy greater than hand counting.

Indexing Attachment: Increases efficiency to point where packages without inserts are entirely eliminated.

Machine Weight: Approximately 120 lbs.

Height Range: Adjustable 34″ to 52″

Insert Size Range: Min. – 2″ x ½″. Max. – 6″ x 8″

Additional Information: Write for Bulletin No. 900-1

THIELE PACKAGING MACHINERY COMPANY

A Division of Stainless & Steel Products Co. • 1004 Berry Avenue, St. Paul 14, Minn. • Telephone Midway 6-8833

CONVEYING • INSPECTING • CASE LOADING • PRODUCT CARTONING • CARTON HANDLING • SPECIAL MACHINES

People are buying... products packaged in STRETCH PAK

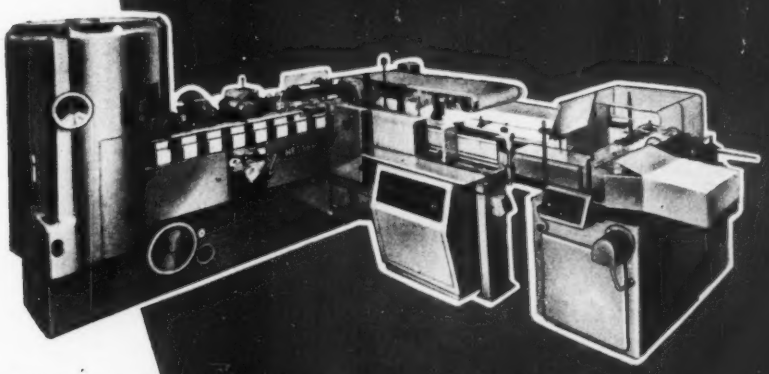
Write today for a gift STRETCH PAK, offer limited, and illustrated brochure describing how to get a bigger measure of merchandising.

DOWNINGTOWN PAPER COMPANY - DOWNINGTOWN, PENNSYLVANIA

packaging division

ANOTHER NEW HESSER MACHINE

205/2



Based on the design of the pro… high speed packaging machine with an output of up to 350 packages per minute, the … easily adjustable unit type PUV 4 has been created.

Operation:

In a fully automatic operation the … bottom glueing device, filled either … means of precision weighers or fillers and … at the top in continuous motion.

Machine Speed:

abt. 120–200 packages per minute, d… on material to be filled and package size.

Package size range:

min. abt. $3\,^{3}/_{16}'' \times 1'' \times 5\,^{1}/_{2}''$ … 9"10 — 14"5"
max. abt. $6\,^{11}/_{16}'' \times 2\,^{3}/_{8}'' \times 10\,^{7}/_{16}''$
max. volume 2700 ccm

Attendance:

1 person for generally supervising the uni… and 1 person for boxing off the … packages if there is no automatic case pack… provided, which is also available.

Special Features:

1) The machine is easily adjustable for packa… differing in all three dimensions within the size range indicated.
2) The plate type filler incorporated can be a… by means of a hand-wheel to varia… tions in volume up to 35%. In case packag… vary to a higher extent the filling … can be exchanged in a matter of minutes.
3) Simple servicing and well accessible lubricat… groups cut down maintenance.
4) The machine can be equipped either with si… discharge or … direct connection to a case packer. Sturdy co… construction gives a … performance during daily operation.

All these features make this unit ideal for in pack…

detergents, soap powders, rice, salt, sugar, lentils, peas etc., small paste goods, and similar items.

For further information please contact:

Diederichs & Griffin Comp., Chicago 48 / Ill.
Geveke & Co. Inc., New York 4 / N. Y.
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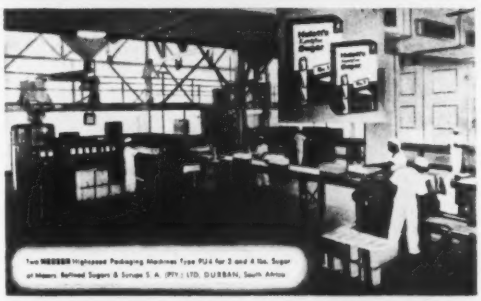


Two HESSER Highspeed Packaging Machines Type PUV 4 for 2 and 4 lbs. Sugar at Messrs. Refined Sugars & Syrups S. A. (PTY.) LTD. DURBAN, South Africa

FR. HESSER
MASCHINENFABRIK-AKTIENGESELLSCHAFT STUTTGART-BAD CANNSTATT … 861

Another quality product that now uses

Riegel FOLDCOTE

Full-bleached sulphate board on-machine coated, one side

For noticeably brighter, cleaner packages ... and extra eye-appeal ... try Riegel's outstanding new carton stock ... Foldcote. Superwhite for color brilliance, super-smooth for high-fidelity reproduction ... super-strong for a rugged, rigid package. Ask for samples and full information. Ask too, about other solid bleached boards tailormade to your needs. Write to Riegel Paper Corporation, 260 Madison Ave., New York 16, N.Y.

Trenton Folding Box Company uses Riegel Foldcote for Becton, Dickinson and Company Ace® Elastic Bandage cartons... printed letterpress in 2 colors.

World Report

Abstracts from foreign packaging magazines

CANADA

View on additives chaos

"It probably won't happen here," writes Sidney Roxan, editor of *Canadian Packaging* (Canada), commenting that Canadian packagers drew a sigh of relief as they came to this conclusion after attending a seminar on the U.S. Food Additives Amendment. The meeting, organized by the Packaging Assn. of Canada, was addressed by John C. Clay, National Starch & Chemical Co., who has represented the Packaging Institute at many meetings with U.S. Government officials on this legislation.

"The 200 packagers," says Mr. Roxan, "after hearing of the chaos being caused in the U.S. packaging industry, took as much comfort as they could from the necessarily guarded remarks of Dr. C. A. Morrell, director of the Food and Drug Directorate of the Canadian Department of Health & Welfare, who is currently engaged in preparing new regulations for the same area in Canada."

The sum-up of Dr. Morrell's comments were as follows: While F&DD is already under pressure to have in Canada regulations similar to those being put into force in the U.S., they are "not likely to be identical." His group at F&DD, he said, is currently giving thought to regulations governing this field and the Government has the power to pass regulations under Sections 4a and 24 of the Canadian Food & Drug Act. At present no words have been written down anywhere in Food & Drug on this subject, Dr. Morrell avowed.

At a meeting with industry last April, his department compiled a list of substances which have been added to food. It has circularized this list to industry and asked for suggested additions to be sent in by October, together with comments on the already compiled list. The response so far has been favorable. "We do not want to throw our weight around in doing what we have to do," he said, and did not think the Canadian regulations, as and when formulated, would contain anything similar to the Delaney clause in the U.S. law, (which bars the use of known cancer-causing chemicals in any amount).

His department expects to sit down with paper and other packaging-materials industries to find out just what goes into their products and was convinced that it could work out what is, and what is not, a possible hazard to health. "I feel, as is often the case in Canada, that we will benefit from work being done in the United States," he said.

"Many observers," according to the *Canadian Packaging* editorial, "took this as a hopeful sign that F&DD would not be adverse to accepting the technical information and the results of various tests on packaging materials in the U.S. as the basis of safety submissions by Canadian suppliers.

And in an interview following the meeting, Dr. Morrell, apparently, indicated it was quite possible that by the time the Canadian regulations are composed, put before industry for its comments and finally passed, the U.S. industry may have completed tests and obtained approval for the bulk of the components of packaging materials, even if it proves necessary to extend the current 1961 deadline for a year.*

IRELAND

Packaging problems of freeze-dried foods

A factory erected by the Irish Sugar Co. at Mallow, County Cork, reportedly will be first to exploit food preservation by the process of accelerated freeze drying (AFD) that will pose difficult problems for the makers of packages and packaging materials, says *Packaging News* (England). AFD foods need package protection from four causes of deterioration, the article states: moisture uptake, oxygen uptake, flavor contamination and mechanical damage. And a one-year shelf life must be contemplated. From most points of view the tinplate can is probably the best pack for the purpose. Corrosion problems are practically non-existent because contents are dry and fast machines are available for the work of canning. But tinplate is heavy in relation to AFD contents, especially with small packs, and it lacks adaptability in shape by comparison with flexible packages which can more easily follow the food contours and so reduce head space as well as prevent movement within the package. Rigid composite containers would cost more than cans. Molded plastics have been considered, but it is doubted whether any single plastics material would give the required protection. No one container is likely to meet the requirements of all AFD food products. Flexible laminated materials appear to offer the best opportunity. They are light in weight and adaptable in many respects. In pouch form, however, they may waste space if the product is awkwardly shaped. A rigid package then becomes more suitable if it can be protected from internal or external mechanical damage. This may be done by enclosing a sealed flexible package within a carton. A manufacturer making a variety of frozen dehydrated foods could use a standard outer carton and vary the inner bags or liners to suit specific products, combining the essential sales appeal with economical protection. Equipment needs appear to be for automatic 60-100 a minute machines to fill, vacuumize, flush with gas and seal packages of the bag-in-carton type.

Packaging of freeze-dried foods has had less prominence than it deserves, the article points out, and much research is still needed if this type of food processing is to succeed.*

ISRAEL

Packaging exhibition in Tel Aviv

A national packaging exposition was held in Tel Aviv in June under the sponsorship of the Israel Packaging Institute. According to the institute's journal, the aim of the exhibit was to encourage more efficient packaging for products marketed at home and for export, and to counteract a widespread misapprehension that good-quality packaging is obtainable only from abroad.*

ENGLAND

Packaging-odors conference

More than 300 packagers are expected to attend a "packagirg-odors" conference in London Nov. 24-25. The selection of this subject for a two-day meeting, according to *Packaging News* (England) arose out of a discussion by the Institute of Packaging's sugar confectionery group last year. Significance of the subject can be gauged from the fact that Cadbury Bros., Ltd., chocolate manufacturers, published a booklet "Printing Odor in Food Wrappers," drawing attention to what they are doing about this problem and to encourage other firms to take similar action.

From time to time, says Cadbury, many food manufacturers receive printed labels which are so odorous they can contaminate the goods packed with them. The problem is made more difficult by the fact that the condition is intermittent. An odorless supply may be followed by another delivery from the same printer that has a positive odor. Many years' experience enables Cadbury to say that nearly every printer's work may have this defect.

The hope is that the conference will afford an opportunity

***For additional information, write: World Report Editor, MODERN PACKAGING, 575 Madison Ave., New York 22.**

to learn more from the experience of others and to find out about treatments that have not yet been explored.*

Low-cost formers for skin and blister packs

Inexpensive equipment for producing skin and blister packages on a relatively small scale are being made by a British firm. Their price range is around $500 to $600. All the machines are fitted with a high-density heater of 3-kw. output so that they can handle polypropylene, high-density polyethylene and nylon, it is reported in *Packaging Review* (England). They should, therefore, prove useful in the laboratory for test runs and for small production runs. Each has a built-in vacuum surge tank and the actual vacuum-pump unit is connected with a flexible hose so that the pump can be placed under the bench or table on which the equipment is being used. Two models have a forming box measuring 17 by 11 by 3 in. and take a sheet size of 18 by 12 in. A simple roll holder to take 6-in.-diameter reels is built onto the equipment. Besides being suitable for producing skin and blister packages, two of the models are designed for thermo-covering work using unsupported PVC materials and for drape forming.*

Bottle smasher for non-returnables

Broken bottles take up less storage space than whole ones and they pose less of a disposal problem, according to the makers of new bottle-making machines described in *Packaging Review* (England). Many local authorities are reluctant to take away loads of non-returnable bottles, but it is thought that they may have less objection to collecting fragmented glass. A British firm, therefore, is offering two models of a machine that can break 600 bottles an hour into glass fragments ½ in. across. One model is designed to fit over a normal-sized dust bin. The other looks something like a refrigerator. In the machine, the bottles are dropped through spring return lids, through rubber baffles that prevent flyback of broken glass and onto a steel breaking rotor.*

AUSTRALIA

Filling machine constructed of PVC

A revolutionary bottle-filling machine made entirely of rigid polyvinyl chloride (except for the power unit and drive mechanism) has been designed and built by an equipment manufacturer in Australia. According to *Pakit* (Australia), the machine was devised primarily to meet the problem of bottling corrosive liquids, such as the bleaching agent, sodium hypochlorite, but the machine reportedly has important advantages over conventional equipment for any type of bottling. Heretofore, vacuum-filling machines made of stainless steel have been used generally for corrosive liquids. Use of plastic in the machine results in lower capital outlay and in reducing maintenance costs to almost nil, the machinery supplier says. Gravity feed is used in place of vacuum filling, which has the effect of reducing turbulence in the liquid, thus cutting down frothing, and permitting faster filling operations. The machines can be made to fill containers from 4-oz. to 4-gal. capacity.*

GERMANY

Bread baked in cellulose film

Several German bakeries are proposing to save time and money by baking loaves of bread inside folded wraps described as a baking-type viscose film. As reported in *Packaging News* (England), the portion of dough is inserted in a pre-formed tube of film with a wooden platter and the free ends folded underneath before ovening. When the wrapped dough is baked, the loaf rises and completely fills the fabricated wrappings, baking from the center outwards. The crust forms toward the end of the process, which is said to save fuel because there is no need to open the oven vents to reduce steam for browning the crust. It is claimed that there is a one-fifth saving of oven space and a saving of time previously needed to allow the baked loaves to cool before they are wrapped. Weight loss is reduced by from 2 to 4%, so that bakers get more bread from a given weight of dough. The bread is untouched until it is unwrapped by the consumer and it keeps fresh for a longer period (another 6 to 8 hrs.) because of greater moisture retention. The principle, it is stated, will apply equally to baking various cakes and pies, and trials are under way. Baking-type films, specially plasticised, are reportedly being made to withstand temperatures up to 520 deg. F. There is also a machine made in Germany to put the lumps of dough into the fabricated tube of film.*

SPAIN

Exhibition in Barcelona

Growth of packaging activity in Spain is indicated by the account of the IV Salon del Envase Y Embalaje at the 28th International Fair in Barcelona in the May issue of *Información de Embalaje* (Spain). This publication lists 78 exhibitors of packaging materials and equipment from Spain and other countries in contrast to a reported dozen at the first similar activity held in Valencia in 1954.

The same issue pursues the theme of package sizes in relation to the standardization program of the European Packaging Federation. In a carefully prepared article, documented with tables and graphs, it points out some of the obstacles, citing paint in cans as an example. Paint apparently has been sold in Spain by weight instead of liquid volume. All paints, however, do not weigh the same in relation to the area they cover when used, the article states. If all paints were of the same density, a weight-surface-covering ratio could be established. But they do not. The density varies with composition and color. It may require three times as much white as black paint to cover the same area, it is stated. If Spanish products are to compete outside Spain, then container sizes should be established on the basis of liquid volume (that is, litres instead of kilos), as has been done by the Transocean Marine Paint Assn., according to this article.*

CANADA

Slow-down to save money, get better package

Contrary to all usual principles of packaging, Imperial Tobacco Co. of Canada, Ltd., is *slowing down* its equipment to save money. The secret of the packaging paradox is reported in *Canadian Packaging* (Canada), as the merging of three machines into one with resultant savings in operational staff more than offset the need for more machines.

Previously, Imperial used three different, autonomous machines to handle the basic cigarette-packaging operations—packaging and excise stamping, wrapping and parceling. It took 15 employees to turn out 48 cartons a minute. By blending the three operations into one unit, it takes only one operator to produce 12 cartons a minute.

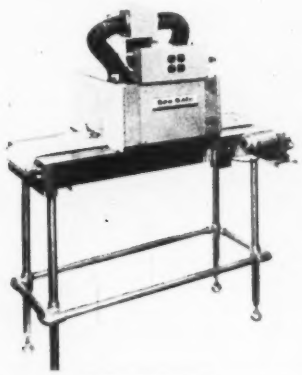
The units are placed around three sides of a square with controls on the inner side. The operator is stationed at the center of the square so that everything is within convenient reach. Packages pass from one stage to the next so that there is no need for collating them, lifting them into feeders or any other hand-positioning operations.

Equipment investment is reportedly higher than for the old, in that there are now four cartoning machines and two overwrap machines replacing one each of the high-speed machines of these types. But the new machines are smaller and less expensive than the faster, larger models. And the increased capital outlay is more than balanced by the reduction in manpower costs, the more economical use of floor space and better quality control. The wrappers, operating at a slower rate, do a better wrapping job and the number of rejects has been reduced, it is stated.*

*For additional information, write: World Report Editor, MODERN PACKAGING, 575 Madison Ave., New York 22.

Packaging Notes

Low-cost contour packaging equipment (below) tight-wraps any shape product with a special formula transparent polyethylene film. Machine's key feature is a heated-air shrink tunnel. No liquid dip is required; there is no appreciable change in product temperature. According to the manufacturer, low cost of equipment and polyethylene film plus reduced handling and labor expenses make this machine ideal for packaging almost any item, even at relatively low production rates.



A one-piece brush and cap for containers of paste, shoe polish, rubber cement and the like employs a polyethylene shank and flange, preassembled to a metal cap, to prevent seepage and evaporation of liquid contents. The Molding has a retaining bead which holds the flange firmly against the metal, eliminating the need for riveting or soldering and a washer. Swab is stapled in place. Designed to replace a steel shank and cap, the assembly comes in a range of sizes and colors with application swabs to fit any production equipment.

"Plastics Packaging—Problems, Potentials, Profits" is the theme of a Packaging Institute seminar to be held September 28th at the Statler-Hilton Hotel, New York City. Twenty panelists, including a representative from U.S.I., will participate in the discussion, which will cover all phases of packaging–from resins to end use. For details, write to Packaging Institute, 342 Madison Ave., New York 17, N. Y.

U.S.I. Introduces Two New PETROTHENE Polyethylene Blending Resins

Also Useful for Injection Molding into Items with High Flexibility

U.S.I has developed two new high-melt index PETROTHENE resins ideal for blending with lower flow polyethylene resins for non-critical injection molding applications. The high flow characteristics of these resins can serve to greatly increase the flow of other available resins to meet product and production requirements. These resins are also usable without blending for injection molding of non-critical items where an extremely high degree of flexibility is required.

Artificial flowers such as these can be injection-molded from U.S.I. PETROTHENE 270 polyethylene resin.

PETROTHENE 270 has a melt index of 70 and a density of .912. It is an ideal resin for molding soft items such as artificial flowers. Key properties include *very* high flow rates, *very* high flexibility and excellent low-temperature impact strength in molded items. Because this high flow resin can be molded at an extremely low level of locked-in stresses, it shows excellent low-temperature impact strength according to practical type tests on molded items conducted at U.S.I.'s Polymer Service Laboratories.

In addition to high flexibility and resistance to cracking at low temperatures, products molded from PETROTHENE 116 have high gloss and excellent appearance. This resin can be used to form large non-critical molded items—not as flexible as those made from PETROTHENE 270, but still very flexible. Its density is 0.919, melt index 33.0.

Blending Data Available

U.S.I. has prepared graphs for determining the weight percent of PETROTHENE 270 or PETROTHENE 116 required with any lower-melt index resin to obtain a blend of any desired intermediate melt index.

To obtain these graphs or additional technical data, write Technical Literature Dept., U.S.I., 99 Park Ave., New York 16, N. Y.

Process Improves Bonding Of Polyethylene To Metal

A new process for bonding polyethylene to metal produces unusually strong bonds, limited only by the strength of the plastic itself. The process is ideally suited to copper alloys containing over 85% copper, but the inventors feel it will work with any metal that can be copper plated.

In this process, polyethylene is molded directly to oxide-coated metal. Key to its effectiveness is chemically treating the metal to form a cupric oxide film since neither a cuprous oxide film nor a thermally oxidized surface will form strong bonds. Bond strengths, measured with the conventional Instron machine, are 20 to 40 lbs. per inch of width, in contrast to the best previously attainable strengths of 5 to 10 lbs.

According to the developers, the process will make possible pressure-tight seals between polyethylene and copper in repeater units of submarine cables –long a problem. Out of it, too, may come advances in flexible printed circuits, microwave devices and other electronic equipment where the excellent electrical properties of polyethylene can be utilized. And it may spur wider use of metal-polyethylene panels as structural materials in the construction field.

How to Improve Heat Sealing

A new U.S.I. technical data sheet shows how to solve major problems encountered in heat sealing polyethylene film. Such difficulties as non-uniform seals, weak seals, and film adhesion to the sealing jaw are discussed. For copies of the data sheet, "Improve Heat Sealing by Modifying Equipment," write U.S.I's Technical Literature Dept.

Polyethylene Plus Aggregate Forms New Paving Material

A new paving material compounded of pigmented polyethylene and aggregate promises to bring color-coding of roads and runways closer to reality. It can be mixed and applied (in a one-inch layer) using conventional machinery and methods. Brilliant white test curbing being installed above defines road boundaries. Other possible uses: multi-colored home driveways, tennis courts, sidewalks, swimming pools.

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Packages made of polyethylene-coated paperboard meet these consumer specifications. You'll find that polyethylene-coated board meets your production requirements, too—in printability, heat-sealability, economy.

U.S.I. has developed special PETROTHENE® polyethylene coating resins for food packaging applications. Ask your supplier about the superior moisture resistance, greaseproofness, toughness, smoothness of these packaging materials. He'll be glad to show you how they can keep the consumer reaching for your product.

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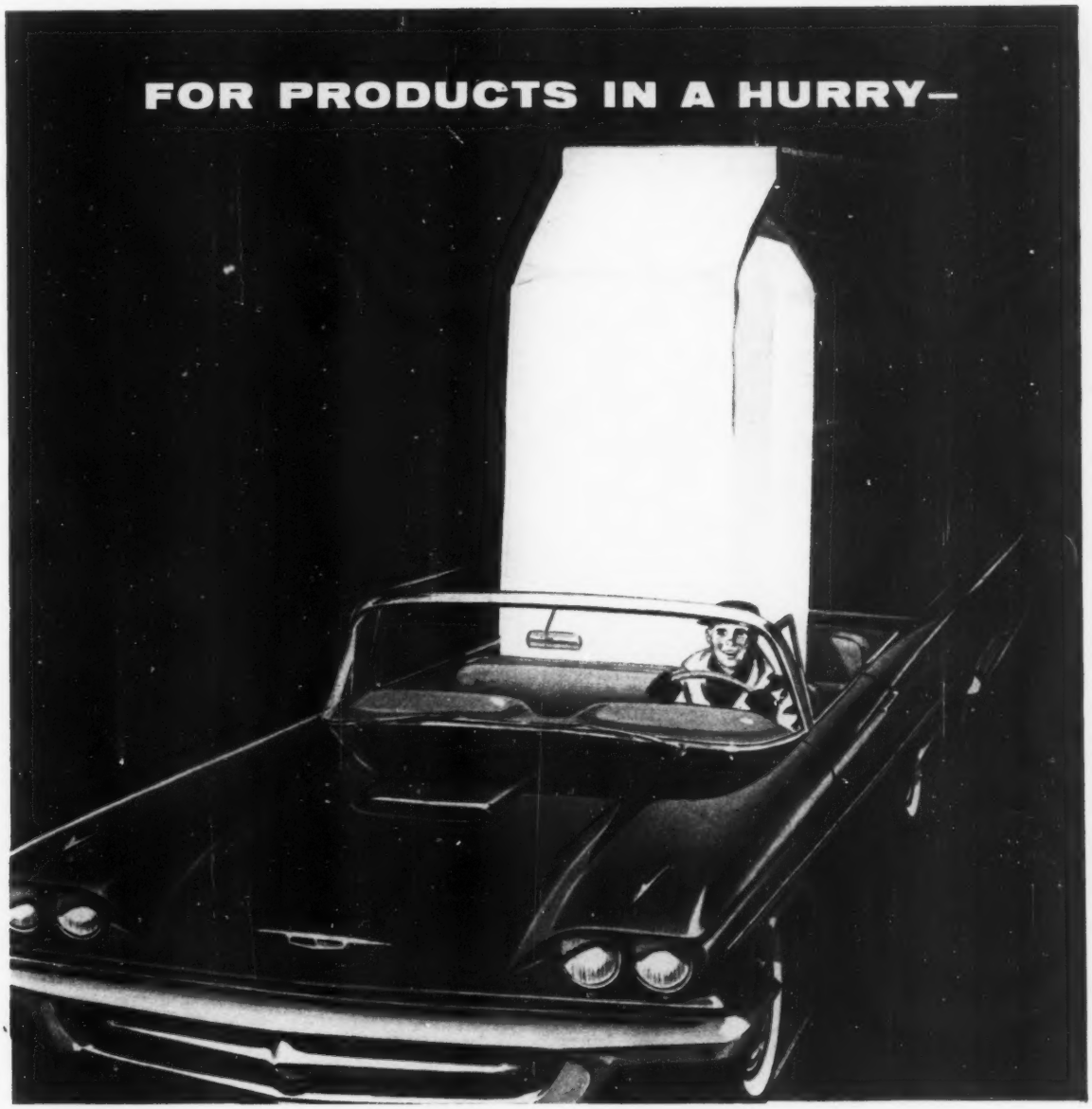

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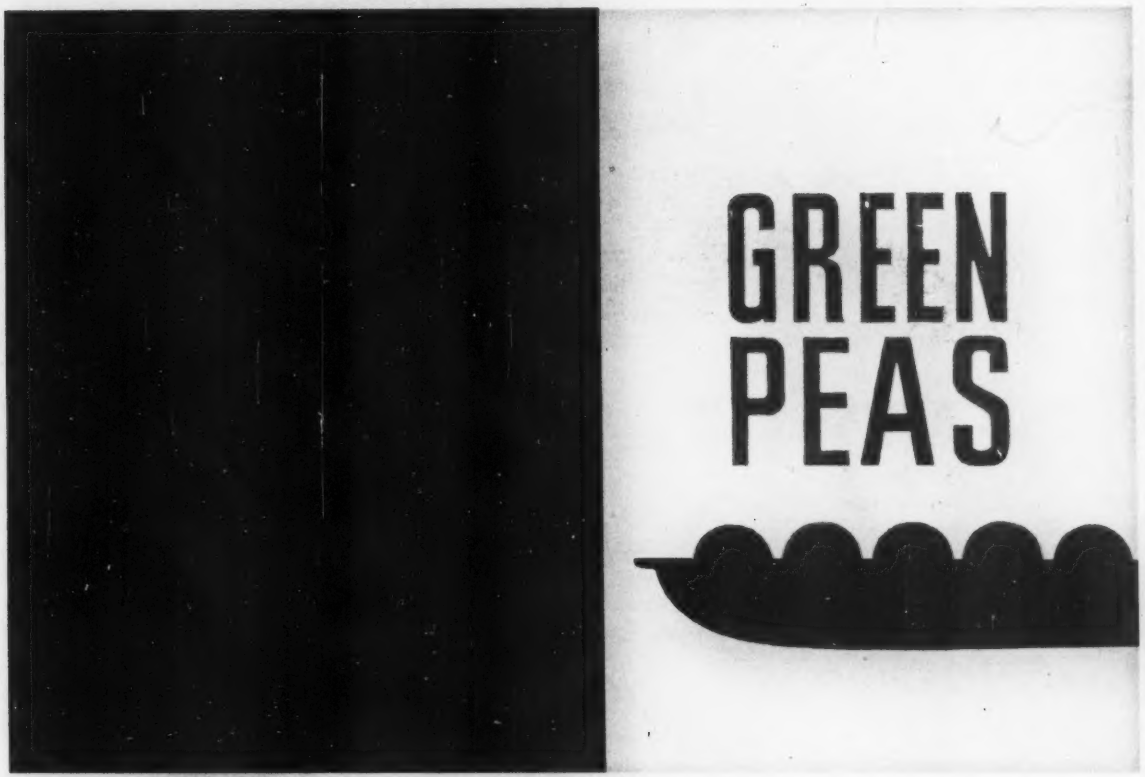

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Foil Packaging

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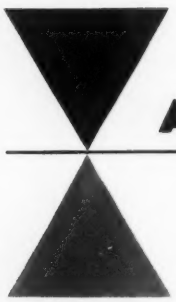

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Foil Packaging

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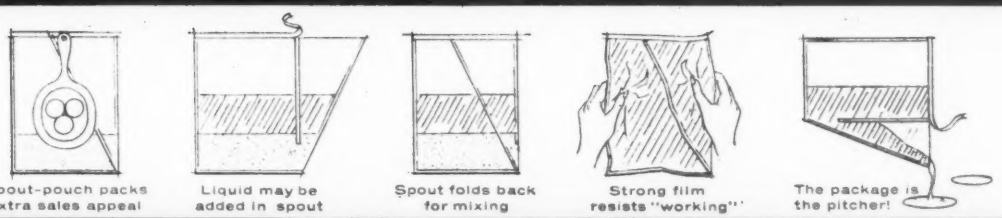
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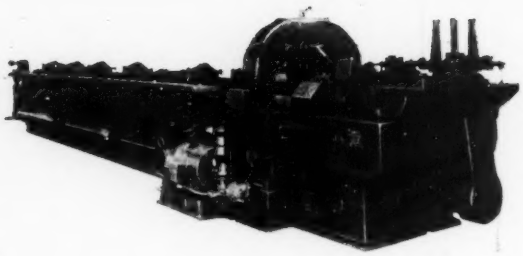
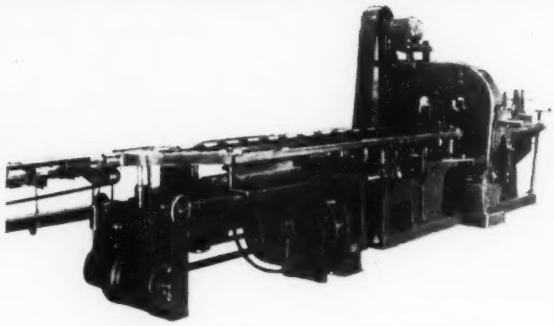


502 BODYMAKER SIZE RANGE

Round Cans

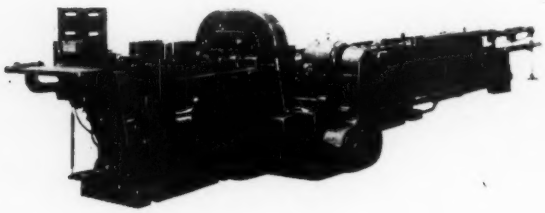
Min. Can Diam.	$2\frac{1}{16}$ in.
Max. Can Diam.	$4\frac{1}{4}$ in.
Min. Can Body Height	$1\frac{1}{2}$ in.
Max. Can Body Height	6 in.



202 BODYMAKER SIZE RANGE

Round Cans

Min. Can Diam.	$3\frac{1}{2}$ in.
Max. Can Diam.	$7\frac{3}{4}$ in.
Min. Can Body Height	2 in.
Max. Can Body Height	$7\frac{3}{8}$ in.



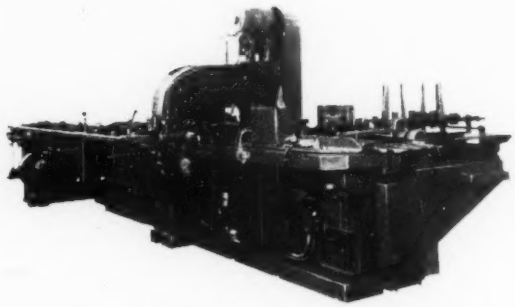
301-L BODYMAKER SIZE RANGE

Round Cans

Min. Can Diam.	$2\frac{1}{16}$ in.
Max. Can Diam.	$4\frac{1}{4}$ in.
Min. Can Body Height	2 in.
Max. Can Body Height	$7\frac{3}{8}$ in.

Rectangular Cans

Min. Base Size	$2\frac{3}{4}$ x $1\frac{3}{8}$ in.
Max. Base Size	$4\frac{1}{2}$ x $2\frac{5}{16}$ in.
Max. Square Base Size	$3\frac{3}{4}$ x $3\frac{3}{4}$ in.



202-L BODYMAKER SIZE RANGE

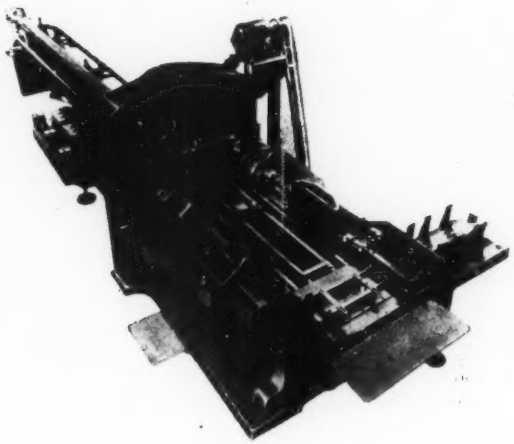
Round Cans

Min. Can Diam.	$3\frac{1}{2}$ in.
Max. Can Diam.	$7\frac{3}{4}$ in.
Min. Can Body Height	2 in.
Max. Can Body Height	12 in.

Rectangular Cans

Min. Base Size	$4\frac{1}{2}$ x $3\frac{5}{16}$ in.
Max. Base Size	8 x 5 in.
Max. Square Base Size	$6\frac{1}{2}$ x $6\frac{1}{2}$ in.

line of MODERN Can Bodymakers production in a specific size range



203-R BODYMAKER SIZE RANGE

Round Cans

Min. Can Diam.	4½ in.
Max. Can Diam.	10½ in.
Min. Can Body Height	2 in.
Max. Can Body Height	14 in.

Rectangular Cans

Min. Base Size	5 x 3 in.
Max. Base Size	9 x 6 in.
Max. Square Base Size	8 x 8 in.

Pear-Shaped Cans

Min. Base Size	4 x 5¾ in.
Max. Base Size	7 9/16 x 10 11/16 in.

No single bodymaker design can effectively handle all popular can sizes and shapes. Fast, profitable production demands machines designed for a specific range. With these conditions in mind, our engineers have designed and built five different bodymakers, each for production within a different size range. Of the most advanced design, they speed production and require only minimum maintenance and changeover downtime. They are built to meet the demands of heavy production and offer long useful life.

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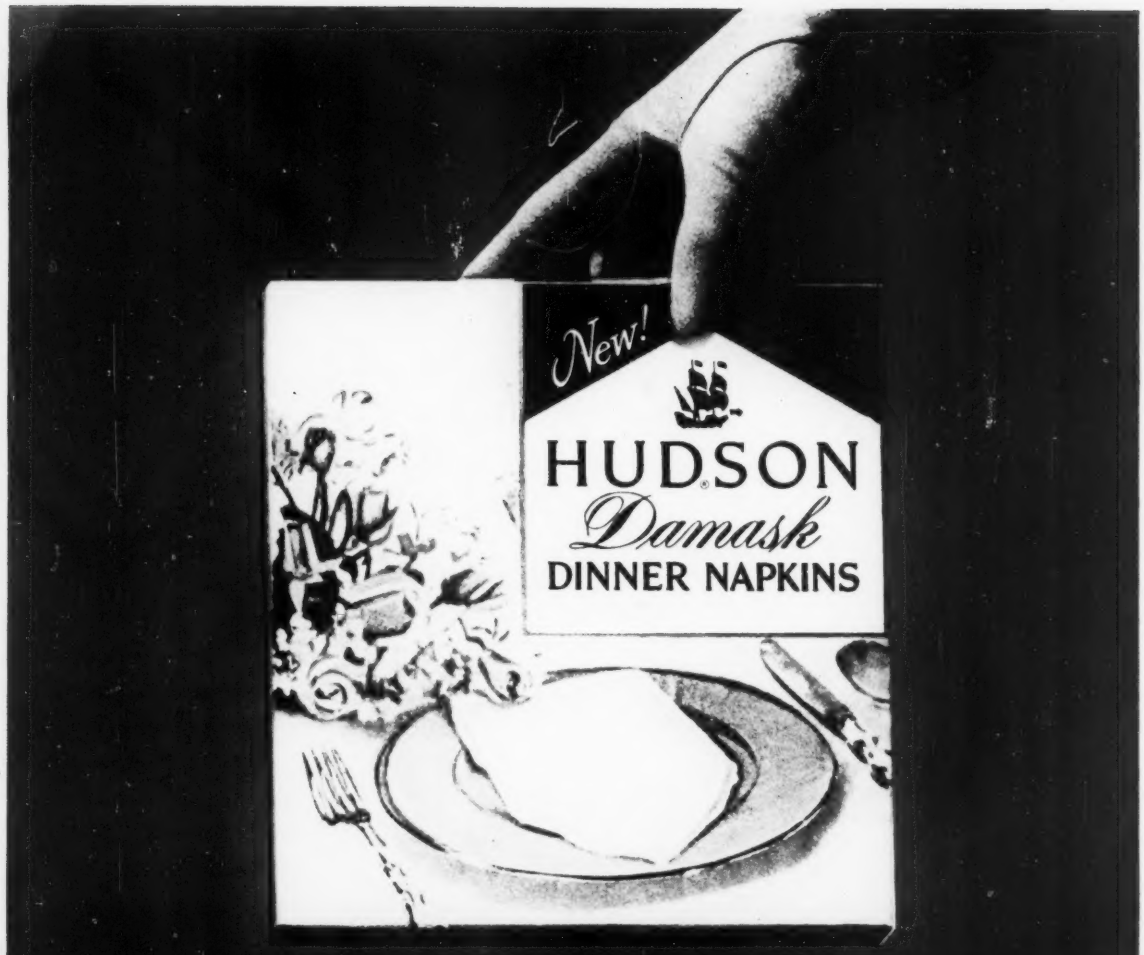

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Editorial Memo

The importance of being persuasive

There seems to us a dangerous tendency at the moment toward unbalanced thinking in packaging. With the "profitless prosperity" that so many companies are experiencing today, it is natural and right that vigorous attention should be given to the production line, where cost-cutting opportunities can always be found—particularly when volume is as high as it is now.

But it isn't right to stop at that point, or to let production questions alone overshadow the other and equally important aspects of profitable marketing of packaged goods. The soundest and most economical package, of course, isn't worth much if it fails to win the consumer's favor.

There never has been a time when package design—in the broadest and most functional sense of the term—was more important. We mean total impact of package on consumer—not only its looks, but its feel, its convenience of use, its communication, its connotation of quality.

A friend of ours who directs the packaging of some of America's best-known food brands preaches the doctrine of "persuasive packaging" and calls it the single biggest difference that exists today between competitive brands. "You can't buy poor products today," he says. "They're all good—or they don't survive. The difference is in the packaging."

And he maintains that the power of persuasion doesn't stop with the buying decision in a store. Repeat sales and brand loyalty can be built only upon the performance of the product in the home and here the package plays a role which is not too widely appreciated. The convenience with which the package may be stored and used, the visual impression it creates during extended use, the clarity and conviction with which it speaks for the product and its maker—all of these are vital points in the battle of brands.

The breakfast-cereal package, for example, is—in the words of C. W. Plattes, advertising manager of General Mills cereals—"the world's greatest mobile billboard." It is a display piece throughout its two- to three-week consumption period, during which time, according to Mr. Plattes, it appears on the table an average 5½ times and is seen by 2½ persons each time. Thus, 45-million cereal packages during their use will deliver more than 600-million in-the-home consumer impressions.

What the cereal makers have done in interesting and imaginative use of package backs and sides to stimulate attention in the home is well worth study by every packager of a consumer product.

There are two ways to increase profits: one, by cutting production costs and, two, by selling more units of product. Actually, the two are interdependent, since production economy generally depends on volume.

The selling power of the package is still all-important.

The Editors

Modern Packaging, Executive and Editorial Offices, 575 Madison Avenue, New York 22, N. Y. Teletype: TWX-NY 1-3063. Cable address: "Breskinpub."

From Nashua's talent with paper and packaging . . .
new products that do more for you . . .

Nashua research puts bread into poly-wraps, for low-cost see-appeal...soft new "fresh-baked" feel!

Bakers have long been interested in polyethylene for bread packaging. It costs less than other transparent film and gives bread a softer, fresher feel. Nashua now makes polyethylene bread packaging practical. Nashua supplies special poly-film, Nashua-developed bands, and special new end labels with low-temperature "flash activation" and astonishing adherence for strong end sealing.

Nashua's wrapping machine attachment is precision engineered for durability. Available for converting existing equipment for polyethylene packaging.

This new "poly-package" is another example of Nashua's productive research with paper and printed packaging. Find out how Nashua can help *you* cut costs . . . improve production . . . or stimulate sales. Write Nashua Corporation, Dept. MP-90, 44 Franklin Street, Nashua, New Hampshire. In Canada, Nashua Canada Ltd., Peterborough, Ontario.

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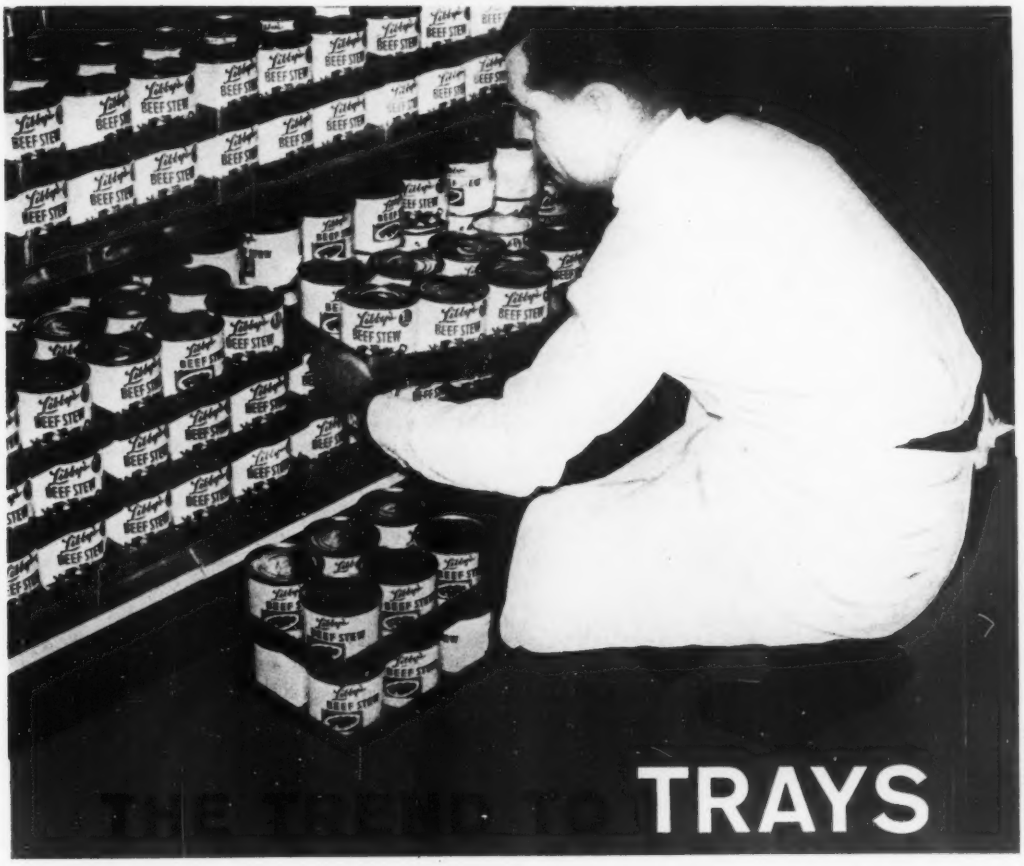


PHOTO COURTESY LIBBY

Retailer convenience *of fast shelf stocking is chief appeal of tray packs converted from corrugated shippers. Lip provides promotional area for both brand and product names. Libby now has 35 meat items in tray-stocking shippers, all in two-tier cases, a change for some items formerly packed in three tiers. Labeling of other Libby shippers is being redesigned to suit tray stocking.*

As retailers turn to the convenience of tray stocking, packagers scramble to adapt their corrugated containers to the practice. But a new concept—tray with overwrap—is in the making

Food packagers and other manufacturers of packaged goods sold through supermarkets cannot afford to ignore the evidence that tray stocking is winning more friends among influential retailers. Nor can suppliers of shipping cartons safely shrug off the fact that supermarket operators are learning to like the advantages of stocking their shelves with packaged goods in a tray that can be made from a portion of the shipper itself.*

It is no longer just a case of the retailer asking for a slight change in the printing on the shipper so that the part of the carton he puts on his shelf doubles as a billboard. Any packager can comply

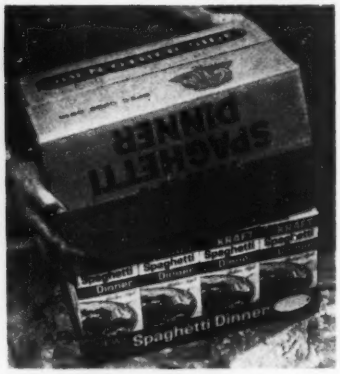
*See "New Zip for Tear Strip," MODERN PACKAGING, April, 1959, p. 178.

Unique tray-within-a-shipper saves time for dealers

PHOTOS COURTESY KRAFT

Conventional *top-loading shipper for Kraft chicken, spaghetti and macaroni dinners represents one of the most ambitious packaging revisions for tray stocking. Special glue patterns on top flaps provide easy opening.*

Bottom *of inner paperboard tray is exposed when corrugated flaps are opened. Easy-to-follow directions printed on the tray tell retailer how to turn carton upside down and lift off case.*



Stocking tray *retains cartons after the shipping container has been lifted off. Prominent price spots are in a handy position on top of individual packages and on tray lip.*

with this request simply by asking his shipping-carton supplier to change printing plates.

Rather, the latest development in the growing trend to tray packs threatens to revolutionize the shipping of a great many packaged products.

The Jewel Tea Co., Chicago, a food chain and private-label packager which pioneered with tray stocking in its more than 200 Midwestern supermarkets, is experimenting with an entirely new type of tray shipper that sacrifices considerable corrugated in favor of paper overwraps. This tray-plus-overwrap is being tested by some big food brands.

Some of Jewel's private-label canned vegetables are being supplied to its stores in pre-made corrugated trays stacked four or five deep on pallets. Each tray is overwrapped with heavy kraft paper. The trays themselves have bleached surfaces with multicolor printing. Their merchandising appeal is said to be so strong that sales of Jewel Maid canned beans rose 40% following the appearance of the new trays on Jewel store shelves.

Obviously, this is merely one instance of a drastic modification of traditional shipping practices. Jewel officials admit that there are still some problems to be worked out in the handling of these trays because the product-damage ratio is higher than with conventional-type shippers.

No national brand is yet known to have substituted such overwrapped corrugated trays for regulation shipping containers, in regular practice, nor have such trays received interstate carrier approval. However, the Schulze & Burch Biscuit Co., Chicago, has reportedly switched to overwrapped trays for its soft-wrapped cookies. The individual packages are automatically loaded into a corrugated tray, another tray is fed and loaded on top and the two tiers are kraft overwrapped as a unit. All the store operator need do to ready the cookies for shelf stocking is remove the overwrap. Since these tray-packed cookies are delivered to stores in S&B's own trucks, there are no major shipping problems. But it is suggested that the new packaging machine being used by this baking company is readily adaptable to heavier overwrapping materials that will meet interstate carrier requirements.

These straws in the wind are significant because they indicate that regional proponents of tray stocking are not just asking—they're doing. A breakthrough by a major national brand could easily influence others to get in line quickly.

Action by national packagers

Already Kraft, Libby, Armour, Campbell, Heinz, Pet Milk, Del Monte and many other big food names are printing their standard shippers so that when the box is cut, an attractive and identifying "lip" remains on all four sides. Some packagers are printing both top and bottom of two-tier cases in this way so that two trays result.

After pioneering experiments six years ago, Kraft is providing a separate tray inside each shipper of prepared-dinner items. The retailer, opening the top-loaded shipper in the conventional manner, comes upon the bottom of the tray with printed instructions to (1) turn over the case, (2) lift it off the tray-loaded contents and (3) move the trayful to

the shelf intact. Following a gradual two-year conversion of shipping cases, Kraft is approaching the point where 100% of its dry grocery products are shipped in cases designed for tray packs. This major packager reports that tests show a time saving of from 20 to 30% for retailers as the result of full-scale adoption of tray stocking.

The tray-stocking movement has gathered momentum slowly, and especially in the Midwest, since 1958. First Jewel Tea, then Kroger, Hillman's and other chains have been sold on the merchandising and cost-saving opportunities which this method of of shelf stocking affords. They have gradually adopted it even though it has meant coping with shipping containers whose graphic design and structure offer no help in the conversion to trays.

The tray-stocking movement has gathered mo- packager cooperation is beginning to build up. Chains which have become tray-stocking zealots are clamoring for shipping-container changes for cereals, cake mixes, detergents (both liquid and cartoned) and baby foods. Convinced that more chains will soon join the tray-stocking pioneers, packagers in certain product categories are moving quickly to redesign their shipping containers. Others, for whom the change could mean large investments in new packaging equipment and handling methods, are carefully watching the situation.

Canned-goods manufacturers now using top- or bottom-loaded cases have been first to convert to tray-suited printing. For them the initial switch means little more than new plates (which have to be replaced from time to time anyhow) and a relatively minor investment in color printing.

Such high-volume cartoned goods as cake mixes and cereals have so far been conspicuous holdouts to the tray-stocking movement because boxed goods are highly vulnerable to knife damage. They need tear tape, cutter-proof corrugated pads or some other safety device which will protect the cartons during the tray-forming operation.

The Miami Margarine Co., Cincinnati, is thought to be the first to experiment with tray-stocking packaging for margarine. The product involved is a private-label one. No changes have been made in the size of the shipping container, nor in the num-

Shelf-saving idea *is suggested by this self-supporting display of Texize all-purpose detergent in trays atop unopened cases, combining the convenience of trays with the billboard effect of shippers that promote special 10-cent offer.*

PHOTO COURTESY BLOCK & DRUCK

PHOTO COURTESY HEINZ

Mass display *of canned goods classifies soup varieties marketed by Heinz, one of the first big packagers to adopt tray-stocking shippers. Retailers and shoppers reportedly find printed trays a great help in distinguishing look-alike varieties.*

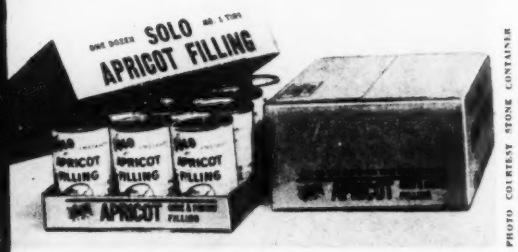


PHOTO COURTESY STONE CONTAINER

Brand and product *are featured on tray design said to be preferred by retailers.*

PHOTO COURTESY OWENS-ILLINOIS

Merchandising messages *without brand or product identity distinguish this redesigned Superose tray-stocking shipper. The packager depends upon new label to display product name above tray lip.*

ber of package units inside. However, graphics have been altered to suit tray stocking and a tear string has been added to make the tray functional.

Problem of cost

The big question in all of this is: Who is going to pay any added packaging costs of tray stocking? With experiments continuing, there apparently are not yet enough data to set cost figures. However, when standard corrugated shippers are merely redesigned so that a printed lip remains after cutting, there is little if any extra cost. If a trend develops toward bleached outer liners, multicolors and other construction and design improvements, there undoubtedly will be added expense. Tear tape to protect such vulnerable products as polyethylene bottles and cartoned goods will cost more, it is said.

The tray-plus-kraft overwrap is reportedly less expensive than standard corrugated once the new packaging-equipment investments are amortized. However, the tray within a standard corrugated shipper, such as Kraft is using for its prepared dinners, is reported to represent an extra cost because it uses somewhat more material.

Supermarket operators welcome the tray-stacking development as a means of bolstering their slim

profit margins. For example, Hillman's Pure Food Stores, Chicago, has found that tray stocking increases sales per manhour from $75 to $100; other tray-stocking experimenters have enjoyed similar gains. The U. S. Dept. of Agriculture estimates that tray stocking saves stores an average 30% in labor costs. It is a certainty that retailers do not intend to give up even part of this advantage by spending more for tray-packed goods. All indications are that the packager may have to absorb any extra cost.

The food chains, in turn, are asking for a minimum of changes, for the time being, at least. The Super Market Institute, spokesman for the industry, would like shippers to conform to these specifications: (1) product name and, if desired, brand name should be printed on top and bottom lips on all four sides, at least 1 in. from corners and no more than 1¼ in. from top and bottom edges; (2) top printing should be upside down; (3) no staples within 2 in. of any corner of the shipper; (4) merchandise should be stacked uniformly, with all tiers facing up; (5) lips of shipping containers should be printed in color to enhance product appearance, and (6) a white price spot on all four sides of top and bottom lips to permit price marking of the tray.

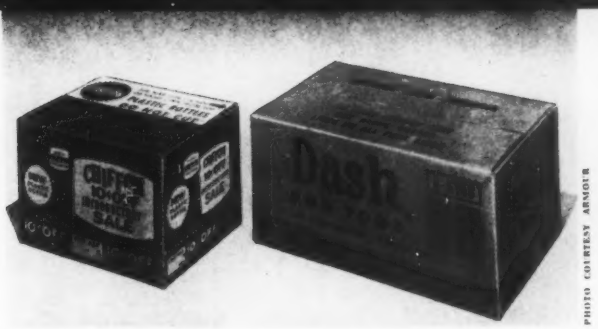


PHOTO COURTESY ARMOUR

Polyethylene bottles *in tray packs (left) were pioneered by Armour, which also uses these convenient shippers for canned products (right). The Chiffon shipper, however, has a tear tape to protect the plastic containers, while the Dash dog-food carton is opened by cutting with a standard knife.*

PHOTO COURTESY INLAND CONTAINER

Bonus display panel *is provided with this two-tier tray-stocking shipper of Burger beer. After two parallel tear strips are removed, the pre-printed center strip forms a vertical unit to feature price.*

Need for tear tape

These SMI standards, fairly simple for packagers to adopt, apply only to merchandise in cans or jars. They are not suited to shippers housing such easily damaged packages as paper, cellophane, polyethylene bags or folding cartons, all of which can be ruined by the sharp cutters presently used by stores to form trays. Improved cutters are being tested.

But stores now tray stocking say they would like to see tear tape or string added to shipping containers for cartoned products although it is said to take nearly twice as long for a stock clerk to pull a tape as to use a cutter. And the lip edges left by tear tape tend to be somewhat ragged compared with a well-cut edge. Stores want tear tape used only on vulnerable items, but they are vocal in their calls for it when such protection is warranted.

Beyond these two refinements—printing and tear tape—tray-stocking chains are willing to stay with conventional shippers for the present. Hillman's director of operations sums this up: "There are still many improvements, some as yet undiscovered, which can be made without major cost to manufacturers. We have to crawl before we can walk in this area and we can't advocate costly alterations in carton design until we have been able to develop—with the manufacturers—the ultimate in terms of present design." He points out, however, that while food chains are trying to be reasonable in their packaging demands, "as more chains become interested in tray stocking, pressures will develop on the manufacturers who sell to supermarkets to an ever greater extent to improve their packaging."

Tray stockers agree the real test will come when they ask packagers to reduce quantities and facings on slow-moving merchandise. "Velocity" (the rate of turnover for a given product) is becoming a much-used word in the tray-stocking vocabulary.

It is said to be pointless to tray stock products moving less than two cases a week. As stores get more deeply involved with tray stocking, merchandise which doesn't lend itself to this form of display will probably get short shrift. It is possible, of course, for packagers of slower-moving items to reduce their case sizes, i. e., 48 packs having two four-by-six layers could be cut in half to 24 packs with two three-by-four layers. But packagers are not likely to do this willingly. It not only means cutting down on their selling unit, but it also means the installation of new [*Continued on page 249*]

Cleaning up a

New look *for Dow Corning's silicone specialties makes clean, dramatic use of two-tone free-form design that is accentuated by split background colors.*

Facing a problem common to many companies in which product diversity has burgeoned since World War II with little regard for a practical uniformity in packaging design, the Silicone Specialties Div. of the Dow Corning Corp., Midland, Mich., is bringing organization out of chaos by the simple expedient of applying a certain sense of family unity to its product packaging graphics. Eighteen months have been devoted to the redesign of packages for only four products in this first round of the program that will eventually affect a number of the company's other products.

During its postwar growth, Dow Corning (1,500 employees) introduced a varied line of silicone specialties products headed by Sight Savers, silicone-treated tissues for cleaning eyeglasses. Other products included Dow Corning 4X, a rubber lubricant and preservative for automotive use; Slipicone, a release agent for use in packaging and labeling equipment and food processing, and Shoe Saver, a water repellent and preservative for leather shoes.

With little in common among the basic markets and distribution channels for these products, little thought was given to creating any packaging re-

Impact of change *is evident in this contrast of old and new packages. Most of Dow Corning's former containers were yellow and black. New packages utilize white along with a metallic tone and two additional colors.*

OLD **NEW**

backlog

Postwar burst of Dow Corning's silicone items created a mixture of adequate, but unorganized package designs typical of many growth companies. Now, smart new containers boast individuality in a family plan

semblance for the line. Individually, the package designs were adequate, but having been created more or less on impulse or by trial and error, they tended to be copy heavy and cried for improvement.

A move to put organized packaging to work for Dow Corning began in 1958 when the firm coordinated all of its silicone-specialties packaging efforts into one program as the initial step in determining if a consistent design image was possible and practical for its hundreds of industrial and consumer products. The immediate objective was to create basic graphics that could be adapted to virtually any type of package. The program's goals were to create package designs (1) with more effectiveness at point of sale, (2) reflecting a quality image associated with the scientific progress of a substantial company, (3) suggesting the character of the individual product and (4) creating a ready association among various products in the line.

After experimentation with design symbols, the already familiar Dow Corning "Free-Form" logotype was selected as the focal point for the new packaging. This symbol, a registered Dow Corning trademark, had been inconsistently used in the previous packaging. The designers decided, however, that the free-form logo offered a good potential of meeting the initial objective, providing it could be given a "higher quality feel." They reasoned that it would be better during this phase of the redesign program to improve use of the logo mark for whatever established recognition value it had rather than to substitute a new and strange symbol.

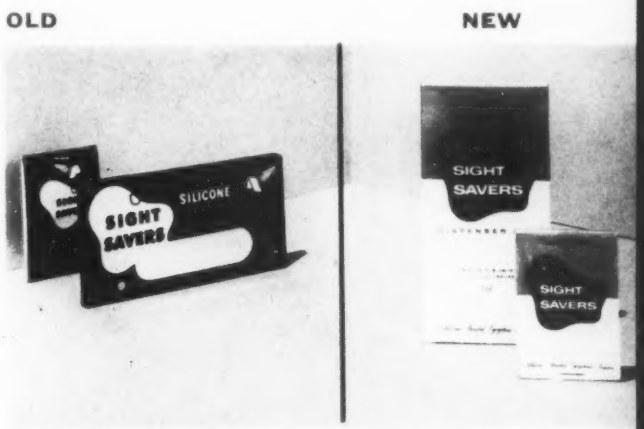
Here are four basic features of Dow Corning's over-all silicone specialties redesign:

- Two-tone color handling of the free-form trademark with the color divided horizontally—dark on top, lighter shade on the lower portion.
- Prominent product name in the free form, using bold white lettering—the first word positioned above the color break, the second word below it wherever the product has a two-word name.
- Miniature symbol in the upper left area of the free form to suggest product use or service.
- Over-all background package colors of white and metallic copper, bronze or gold—this metallic color area at the top, white at the bottom, with the color split coinciding with the color separation point on the two-tone free form.

These general design features were applied first to Sight Savers packages. These are sold in two sizes: a small booklet for purse or pocket, and a larger dispenser package for desk or auto glove compartment. Color selection was important in creating a design atmosphere consistent with the idea of good vision and eye care.

Finally chosen were dark blue and medium blue for the two-tone free form and a field of white and gold—crisp colors that suggest cleanliness, clarity and brightness. A miniature "sparkle" was placed in the upper left area of the free form to suggest the high polish that Sight Savers tissues are intended to impart to eyeglasses. Both sizes—booklet and dispenser—carry a clean, one-line product description in gold script at the base, "Silicone Treated Eyeglass Tissues." A third size of package for Sight Savers refill tissues used in wall dispensers at industrial plants carries the same design and color scheme as the two consumer packages.

Compact, self-service, counter-display cartons were also designed for both the booklets and dispenser packages. The merchandise stands in rows in these display units so that the package faces are prominently displayed. Prominent use of the blue free form on these display cartons, as well as on



First redesign *that set pace for family similarity of all silicone products abandoned "old-fashioned and dreary" look of Sight Savers' original package (left) and substituted bright and distinctive graphics (right) that help suggest the sparkle and clarity that this tissue product is intended to impart to eyeglasses.*

the packages themselves, provides a multiple exposure of the design to create impact and product individuality on crowded counters. The gold and white colors of the packages are also carried over to the display cartons with a complement of chartreuse for additional eye appeal.

Already, the company reports an indication that consumers like the upgraded packaging over the old. Early market testing on the "new-look" Sight Savers indicates a sales increase in the range of 40% for both booklets and dispenser packages.

Display units *benefit from Dow Corning's over-all clean-up project. Cluttered, almost illegible unit (left) has given way to new display (right) that uses many modernized features of the package redesign itself. Special display unit (center) simulates spray action of aerosol can when rear light flashes on and off.*

Design conference *pointing toward complete overhaul of Dow Corning silicone-specialties packaging includes (left to right): James M. Walker, director of C & G Packaging, Inc.; Robert S. Argyle, advertising director of Dow Corning, and A. William Rhodes, members of the company's corporate planning committee.*

Other designs follow suit

The new Sight Savers package design became a working model for other specialties products. The water-repellent and leather-preservative Shoe Saver is sold in 4-oz. bottles and 8-oz. aerosol cans through shoe outlets, shoe-repair shops and sporting-goods dealers. In selecting its package colors, designers discarded both brown and black, believing either might suggest that the clean, colorless product is applied to shoes of those colors only.

A large, two-tone-turquoise free form on a field of copper and white was selected to stand out at the point of sale. Bold white lettering on the free form identifies the product and a symbolic drawing of two droplets suggests its water repellency. The bottle label is printed on foil, giving the copper-colored portion at the top of the label a rich, metallic effect. Copy on the front panel is held to a minimum. Product information and directions for use appear on the side panels. The new design is lithographed on the aerosol spray can.

New retail display cartons for Shoe Savers carry out the same color scheme and repeat the basic design with a mood illustration and salient sales points. The carton contains a dozen 4-oz. bottles with daubers. Here again, the individual items and their display carton present an integrated total package of good, clean design and high quality.

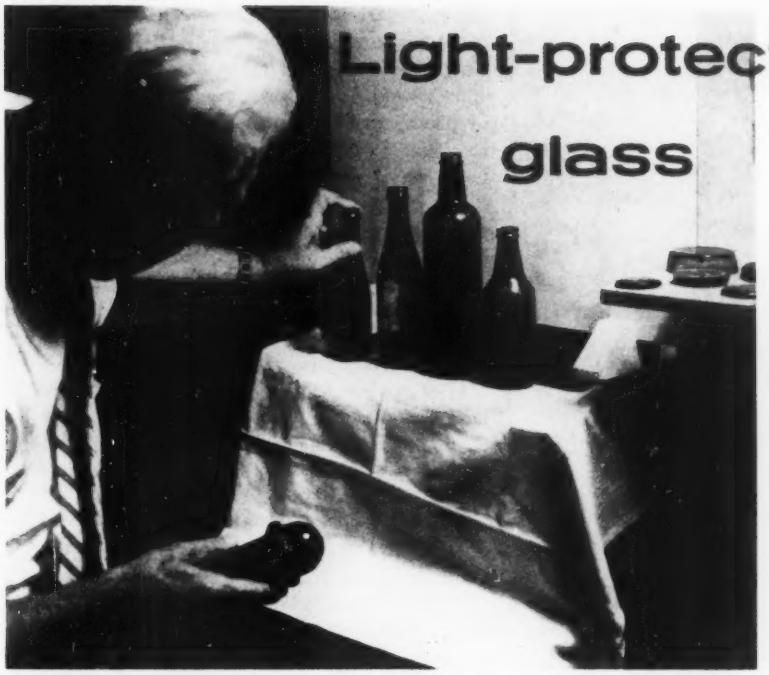
Now in final stages of production is a display carton for the Shoe Saver aerosol unit. It follows the same turquoise-copper-white color scheme and will display 12 cans. It is believed that the twin display cartons for Shoe Savers in bottles and in aerosol cans will result in obtaining double display space on many retail counters.

Another of the silicone specialty products to receive a redesigned package is Dow Corning 4X, a product sold to and through automotive service shops. This is a preservative and lubricant for such rubber parts as weatherstripping, an insulator for ignition systems and a corrosion inhibitor on battery terminals. Colors selected for the 4X spray can and compound tubes are emerald and dark green for the free form on a field of gold and white. The basic "family" graphics were easily adapted to both units and reportedly have already found acceptance in the automotive trade.

Next of the specialties [*Continued on page 250*]

SUPPLIES AND SERVICES: Basic graphic design by Lippincott & Margulies, 430 Park Ave., New York 22, adapted and applied to specific packages by C & G Packaging, 121 McDonald St., Midland, Mich.

PHOTO EMHART MFG. CO.



Light-protective glass

Fluorescent solution *is put in bottles for quick laboratory check of ultra-violet transmission. In a dark room, solution will glow if glass does not block out rays from ultra-violet lamp. These rapid visual tests are backed up by spectrophotometer readings.*

Is it a boon or a burden? Increasing demand for containers that screen ultra-violet rays has brought new emerald greens to commercial reality, but production and cost problems remain

Suddenly, there is a stirring of interest, among packagers in several different product fields, in new color tints of glass which, it is claimed, will effectively block ultra-violet light rays.

One wine maker considered ultra-violet screening so important to his product that he built his own glass plant to produce bottles of a special green-amber shade not available commercially.

Now, at least five glass-container makers have added to their lines a new ultra-violet-absorbent emerald-green shade, which was quickly adopted for its bottles by one of the largest nationwide soft-drink bottlers, the Seven-Up Co. Other beer, beverage and drug producers either have adopted or are closely examining the new emerald-green color for its possible benefits for their products.

What's behind all this? Has ultra-violet screening of glass suddenly become more important to packagers? What are its advantages and its costs?

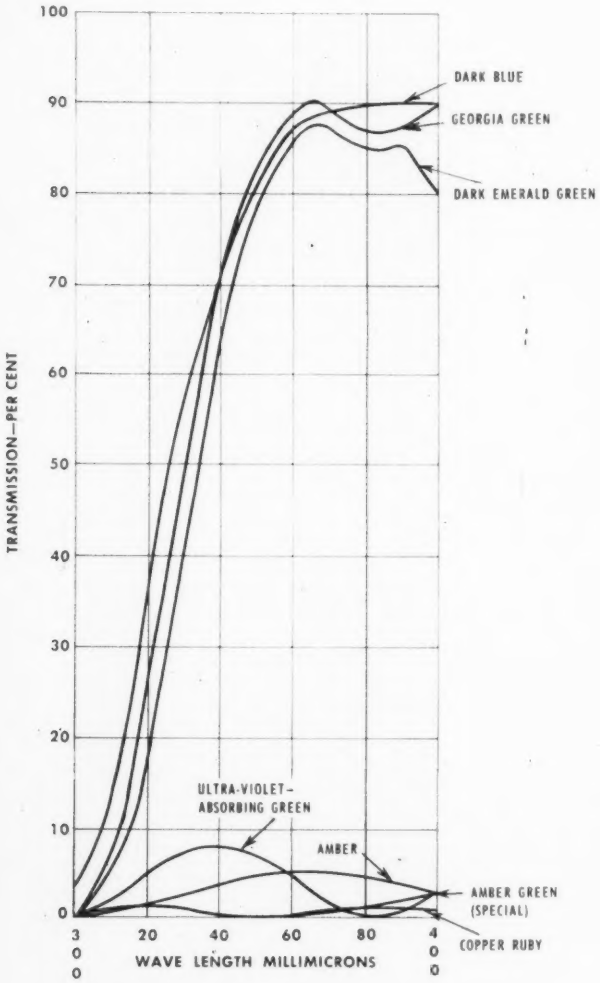
The background

Colored-glass containers have two justifications: (1) sales appeal and (2) protection against product deterioration due to exposure to ultra-violet light rays, which exist in all sunlight. The first point is obvious; the second requires consideration.

In commercial glass, packagers have had a choice of flint, emerald green, Georgia green, blue and amber. Any other colors have required additional cost and, until recently, only amber was known to be effective in screening out the ultra-violet light rays. But where product visibility and color are

Comparison of ultra-violet transmission through various colored glasses

(2 mm. thickness)



Objectionable wave lengths *are known to be in the range from 300 to 400 millimicrons. Spectrophotometer graphs show that among today's commercial glasses for containers only the special new greens (ultra-violet absorbing and special amber green) give protection comparable to amber. Ultra-violet transmission is shown to be virtually nil through copper-ruby glass, but so far red has not been practical for container use.*

important, the amber lacks merchandising appeal.

The recent development of a light-screening emerald green, which offers a pleasing color and good visibility, has therefore attracted the attention of packagers of soft drinks, beer and ale, wines, citrus juices, milk, household bleaches and literally hundreds of drugs and pharmaceuticals, the taste, flavor or efficacy of which are believed to be affected adversely by photochemical changes.

A spur to this development was the decision of the E. & J. Gallo Winery, Modesto, Calif., to build its own glass-container manufacturing plant to produce bottles of distinctive green-amber glass that is ultra-violet absorbing.[1]

Most producers of products which in themselves have eye-appealing color would, of course, prefer to use clear, flint glass. But so far, it has not been possible to produce flint glass that blocks ultra-violet light rays to any degree.

That is one of the drawbacks of light protection of glass. It is not possible to have both ultra-violet screen and clear glass.

A second problem is that of production. Although it is a relatively simple matter to mix a glass batch to any desired color, a commercial furnace cannot readily be changed from one color to another. Change-over is highly expensive. Container makers are not anxious to produce a special color, therefore, until they are assured of a sufficient steady volume of orders to justify continuous operation of a furnace on that particular color.

Although the glass industry is not in agreement on the subject, it appears that demand by glass-container users for a practical light-protective glass may now be approaching that point.

Glass-container makers generally take the position that their customers should make known their problems in the way of product deterioration due to light energy and that they will thereupon do their best to meet them.

"We know," says one glass technologist, "that [under excessive ultra-violet exposure] beer develops a skunky flavor; some soft drinks develop a very strong taste; drugs may lose their potency or have very undesirable side effects after suffering photochemical reaction due to the ultra-violet energy; white wines develop an off-taste, and the dyes and chemicals put in both fluids and solids are bleached out in pharmaceuticals and cosmetics, again due to ultra-violet energy."

The new ultra-violet greens, which in regular production cost little or no more than the standard emerald green, appear to be filling a need in the beverage field, particularly for citrus soft drinks,

[1] See "Wine Maker Turns Glass Maker," MODERN PACKAGING, March, 1959, p. 92.

known as "lithiated," where light protection is regarded as essential to preserve flavors.

Kirsch Beverages (No-Cal) reports that it has switched over all its greens to the ultra-violet-absorbing type. The Pepsi-Cola Co. is using ultra-violet-absorbing green for its soft drink called "Teem," a lemon-lime-type product, and a company spokesman says that if flint glass could be made light protective, they would like it for Pepsi-Cola.

Says the Coca Cola Co., which is probably the largest present user of Georgia green glass: "Our engineering department has interested itself in this problem and would like to see light-absorbent values now available only in emerald green made available in other colors of glass."

Some brewers are switching ale—traditionally in green glass—to green of the ultra-violet-absorbing type. Ballantine's Ale and others are now in this new kind of protective green glass. Most beer brands for many years have favored amber glass because of its effectiveness in protecting flavor and the amber color has become traditionally identified with this product. There are exceptions, of course; notably, Miller's High Life in flint glass. Miller ships its clear-glass packages in closed cases to protect the beer from exposure to sunlight. F. & M. Schaefer Brewing Co. at one time packaged its beer in clear flint, but has switched to amber.

Research

In the course of color research, which has been going on for years, glass laboratories have investigated ultra-violet transmission rates and the facts are pretty well established. The art of producing colored ultra-violet-absorbing glasses other than amber has existed for many years. But in the container field there appeared to be no real demand for such glasses until a few years ago when soft-drink bottlers, receiving consumer complaints of off-taste in certain products, undertook studies indicating that the stale taste appeared to be caused by too long exposure to sunlight.

The Nehi Corp. conducted tests to determine whether exposure to sunlight in outdoor display and open delivery trucks was having a bad effect on the taste of carbonated beverages. In 1957 W. T. Miller, Nehi's chief chemist, reported that off-taste changes were distinguishable in cola-type drinks after from 1 to 2 hrs. of exposure to direct sunlight: in grape drinks, in 4 hrs.; in orange and lemon, in 1½ hr., and in root beer, in two hours.[2]

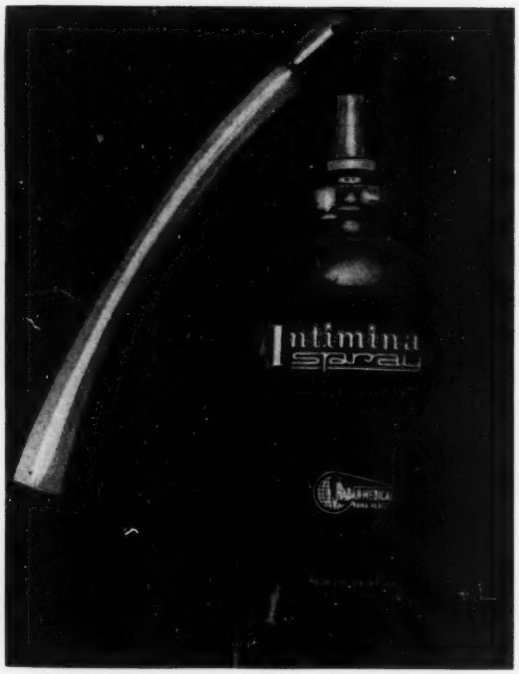
In 1958 Robert Dockery of the Seven-Up Co. presented a paper before the Soft Drink Technologists explaining his company's studies of the effect of various segments of the light spectrum on flavor. This research, using special filters, showed that light in the general region of 360 millimicrons wavelength (near ultra-violet) appeared to be the most objectionable. The conclusion was that a protective-colored glass should be used to exclude this band of light from the product. This resulted in Seven-Up's intensive program, in cooperation with major glass-container suppliers, to obtain glass in the emerald-green color range, considered necessary for merchandising reasons, which would act as a light screen like dark amber.

The new glass, as used by Seven-Up and others, is reported to eliminate ultra-violet transmission in the most harmful 360-400 millimicron wavelength range, yet maintains a color well within the standards of regular emerald green, which transmits 30% of the objectionable ultra-violet.

Working in another direction, the Gallo Winery, believing that ultra-violet destroyed some of the delicate components (and hence, the taste) of its wines, took its problem of finding a distinctive ultra-violet-absorbing glass to the glass-technology laboratory of one of the country's largest suppliers of glass-manufacturing [*Continued on page 223*]

Familiar brands *on the market in new ultra-violet-blocking green glasses. Leaders are Gallo Winery and Seven-Up Co. Ballantine has switched to ultra-violet-protective green for ale. Kirsch Beverages (No-Cal) reports all its greens are now of the ultra-violet-absorbing type. And the Pepsi Cola Co. has adopted this type of glass for its new lemon-lime drink, "Teem."*

[2] See "Sunlight is Bad For Soft Drinks," *National Bottlers Gazette*, Feb., 1957, p. 41.



Aerosol with applicator tube

From Italy comes news of a simple aerosol-packaging refinement that may suggest an idea for medicinal sprays or other types of pressure-packed products requiring specially directed dispensing. The development is another example of the trend toward building improved function and greater convenience into the basic spray container. (See "New Tricks With Aerosols," MODERN PACKAGING, June, 1960, p. 118).

Radar-Medical, Rome, has introduced a vaginal pharmaceutical product called "Intimina" in a coated-glass aerosol bottle. To simplify local product application, the container is accompanied by a flexible polyethylene applicator tube fitted with a rounded tip which has holes on either side to allow product discharge. The open end of the sterilizable tube is designed to slip over the pressure container's standard valve nozzle. When the tube is pressed sideways, the valve is actuated, releasing the pharmaceutical to flow through the tube and emerge from the tip end as a foam. Product thus is directed to the desired area without waste. *Valve and applicator by Solfrene, Milan, Italy, licensee of Risdon Mfg. Co., Naugatuck, Conn. Coated glass bottle by Bormioli, Parma, Italy.*

IDEAS

Foil glamour suggests quality of new Birds Eye line

In the combination of a luxurious-looking, gleaming foil carton overwrap with surface design that takes a distinct tack away from the tradition of photographic product vignettes, General Foods' Birds Eye Div. achieves a subtle suggestion of premium quality in the introduction of Deluxe frozen whole green beans. Background color on the gravure-printed overwrap (a combination of aluminum foil and paper specially treated for machinability) is a rich, lustrous blue.

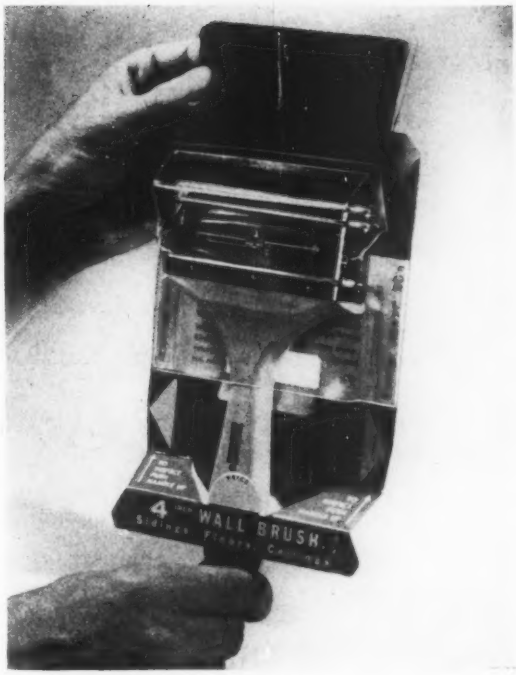
Dominant design element on the facing panel is a color illustration of green beans in a golden basket. The basket motif—which is calculated to suggest the "garden freshness" of the frozen-food product—is repeated in smaller size on the bottom overwrap panel. The bottom panel also features cooking instructions, recipe copy and a vignette of the vegetable on a serving dish.

For distinct identity with other products in the packager's frozen-food line, the familiar red-and-white Birds Eye logo is displayed on the foil overwrap's top, side and end panels. *Design by Robert G. Neubauer, Inc., Fairfield, Conn. Overwrap printed and supplied by Pollock Paper Corp., 2236 Cockrell St., Dallas 22, Tex.*

Now, a 'flip-top' blister

The "flip-top" opening principle, which started with cigarette packaging, now has been carried over to the packaging of paint brushes to provide self-selection appeal and to permit convenient examination of product. The adaptation, by Baltimore Brushes, Boston, demonstrates again that cross pollination of packaging ideas among unrelated product fields can pay rich dividends at the point of sale. (See "Idea Exchange," MODERN PACKAGING, Dec., 1959, p. 95.)

Baltimore's new "push-up" package for paint brushes consists of formed cellulose-acetate sheet heat sealed to a printed, die-cut hang card. Construction of the transparent member permits rapid manual loading of the brush as well as partial removal for tactile examination of its bristles. The acetate piece is open at its bottom end. The upper, "flip-top" portion is unadhered to the card. Slits on opposite sides, about 1 in. down from the top, enable the cover to be pushed back when the brush is removed from the card. When the cover is closed, the transparent plastic protects brush bristles against damage and gives full product visibility. *Hang-up package by Pioneer Folding Box Co., Chicopee, Mass., using Celanese acetate for the blister.*



IN ACTION

Perforated carton converts to display unit or dispenser

A die-cut and perforated folding carton that performs triple service—as the basic product container, as a point-of-purchase display unit and as a wall or desk dispenser—is being used by Regush Products Co., New York, to merchandise Mix-Eez disposable paint or ink mixing cups. Designed for use by artists, the wafer-thin throw-away poly-styrene cups are nested 50 to a carton.

A continuous, partially scored and partially perforated line on the carton permits easy break-apart that converts the container into a display or dispenser unit. The line runs horizontally across the front panel (two-fifths of the distance from the bottom to the top), diagonally to the upper rear corners of both side panels and terminates in a hang tab on the top panel. A punch-out hole in the tab facilitates hang-up of the dispenser on a nail.

For added merchandising appeal, the carton is made from high-gloss, bleached cartonboard stock. Surface design is printed in pink and black; copy is in reverse white. *Carton by Burton Packaging Co., 274 Morgan Ave., Brooklyn 11, using Riegel Paper's "Foldcote" cartonboard. Design by Ken Saco Associates, 185 Madison Ave., New York 16.*

PLEATED SHIPPER

By devising its own box-forming units, Helene Curtis packs hair dryers in a bellows-like container. Result: materials costs are cut 10%, manhours are reduced two-thirds

Although the shipping container is generally regarded as the workhorse of packaging, many shippers today clearly demonstrate that "hard working" does not equate with "humdrum." For, in fact, they incorporate some of the most imaginative and problem-solving ideas in packaging. A case in point is the new "pleated" shipping container used by Helene Curtis Industries, Chicago (1,500 employees and $43,000,000 gross sales), for its line of professional hair dryers.

Before loading, the Helene Curtis container bears little resemblance to a conventional shipper. Intricately scored and die cut, it resembles a giant bellows or mammoth Japanese lantern. In fact, the box-

Compressed *by steel strapping, with top flaps and two middle "pleats" closed, corrugated shipper for Helene Curtis hair dryers is one-half the height of loaded but still-expanded shippers in background. Kick-in corners at top and "pleats" that fold inward protect and support the product and add stability to the entire construction.*

Pleated construction *of shipper is evident as polyethylene-bagged dryer is loaded dome-side down. Helene Curtis runs its several brands on the same production line.*

maker calls it a "pagoda." But there is nothing fanciful about the savings it provides:

1. Packaging time per unit—and hence packaging labor cost—has been cut by two-thirds. The new shipper allows machine set-up in place of a previous hand operation and saves Helene Curtis some 1,500 packaging manhours annually even though dryer production more than doubled in the last year.

2. Materials cost is 10% less than that of the former package despite the complicated die cutting required. Only two separate inner protective parts are needed, compared with seven previously.

3. Dryers packed in the new shippers can withstand almost any amount of abuse without damage, according to Helene Curtis.

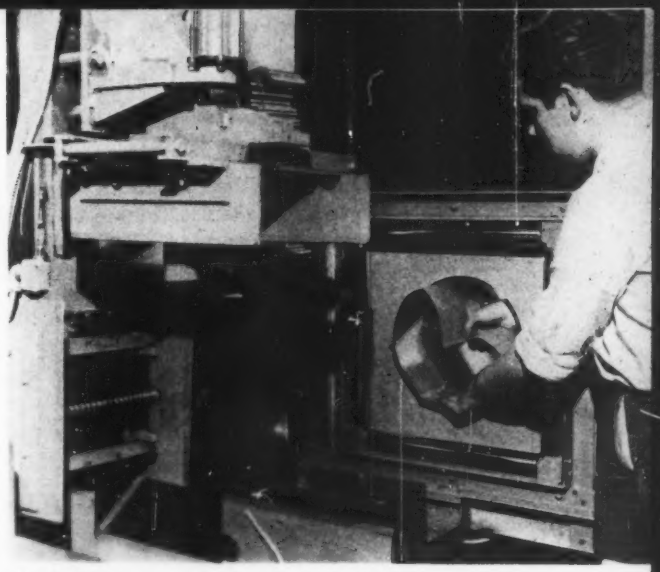
4. The new shipper permits more packaging standardization for all dryer models.

5. Package components take up much less space, so they can be ordered in larger quantities for additional efficiency and savings.

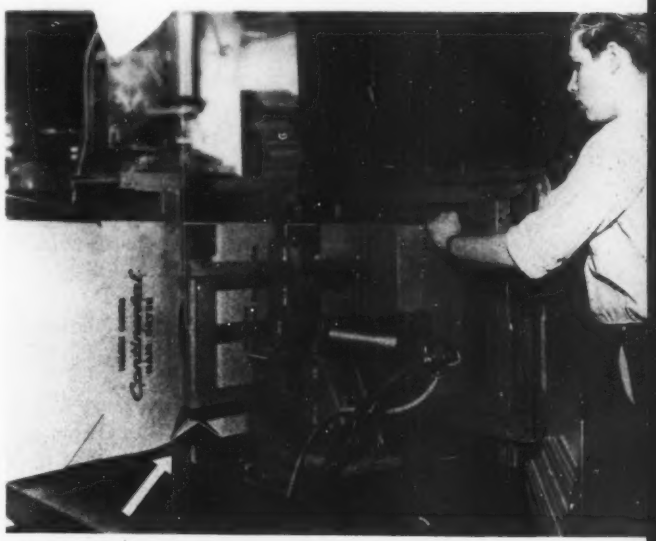
The shipper formerly used gave adequate protection to the easily damaged dryers, but putting it together was slow and cumbersome, Helene Curtis reports. Besides an outer corrugated carton, it used a bottom scored sheet, two die-cut sunbursts, a roll-up, a vertical filler and a top pad—all of corrugated—plus a fibre pad over the dryer's fan housing. Each box took nearly 3 min. to set up.

The new shipper is formed by the boxmaker from one flat corrugated sheet of 275-lb. B flute. It is transected with three horizontal rows of cut-outs, both triangular and oval. Parallel score lines also run around all four sides, at the tops and bottoms of the triangles and through the centers of the ovals. The carton has one vertical manufacturer's joint, interrupted at intervals by the cut-outs. Slotted top-flap extensions are folded inside and are stapled in place by the boxmaker.

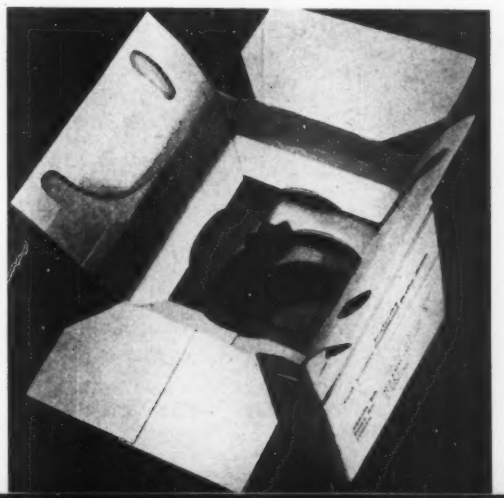
When the horizontal score lines are broken by machine in the Helene Curtis plant, two accordion-like pleats or "bellows" are formed on all four sides. When folded in, they literally "float" the product away from the interior faces of the box and reportedly provide excellent compression strength and rigidity. The extended top flaps, folded in by hand before strapping, form up automatically into two cells and give a supported cushion to the dryer's plastic dome. The flaps of each cell slip into slots at



First step *in setting up the shipper consists of placing blank sheets into the die-cut platform fitted on to by the operator.*



Machine takes over *by mechanically inserting bottom platform in squared-up shipper as four breaking plates hit score lines to form "pleats" on all sides of the container (arrow).*



Looking downward *into compressed shipper, note how die-cut "pleats" provide top two inner supports to grip dryer firmly. Third inner support at bottom is the only separate component and is manually formed. Top flaps, when formed after inserting dryer, become hollow cells with cut-outs which are shaped to fit the product.*

the center of the shipper's top. On the inside surface of the corrugated box, the flaps form curved ribs that are shaped to fit the dryer's contour.

The top of the shipper also has four die-cut "kick-in corners" formed by hand pressure before applying two steel straps. These corners give added stability to the two hollow cells at the top.

The new shipper was conceived and developed by the boxmaker, but Helene Curtis designed and built a semi-automatic set-up machine to accommodate it. With this equipment, shippers are set up in less than a minute, one-third the time previously needed. Helene Curtis says that the machine has already more than paid for itself.

Three distinct operations are performed in a 45-sec. cycle on the set-up machine. The basic machine parts are a horizontal inserter bar and four breaking plates, one of which also functions as a holding arm in the first phase of the forming cycle. All the machine's parts are operated by air cylinders which are actuated by microswitches.

The operator first places on the inserter rod the die-cut inner corrugated sheet and its separate fibre sleeve. As he pushes the first button on a control panel, the front breaking plate—temporarily acting only as a holding arm—moves forward to square up the carton, resting on its side. A second control button actuates the inserter rod, which guides the inner sheet and sleeve into the carton. A fixed roller die on the inserter rod folds the four sides of the inner sheet downward along score lines. The inserter rod then automatically retracts, tripping a switch to actuate the four breaking plates.

Horizontal plates break the board along its score lines, top and bottom; vertical plates do the same for front and back. All machine parts then return to their original positions to complete the cycle as the operator removes the finished box and applies a strip of tape to the bottom flaps of the carton. He passes the carton along to a packing operator directly behind him, who removes a dryer from a moving conveyor and packs it vertically.

While the box former is turning out another shipper, the packer (1) places a polyethylene bag over the dryer for paint protection, (2) stencils code numbers on the box, (3) positions the dryer inside and (4) sends the loaded shipper along the conveyor to the strapping station. Here, a third operator pushes in the four top corners, applies two lengthwise steel straps and stacks the completed packages for pick-up by a lift truck.

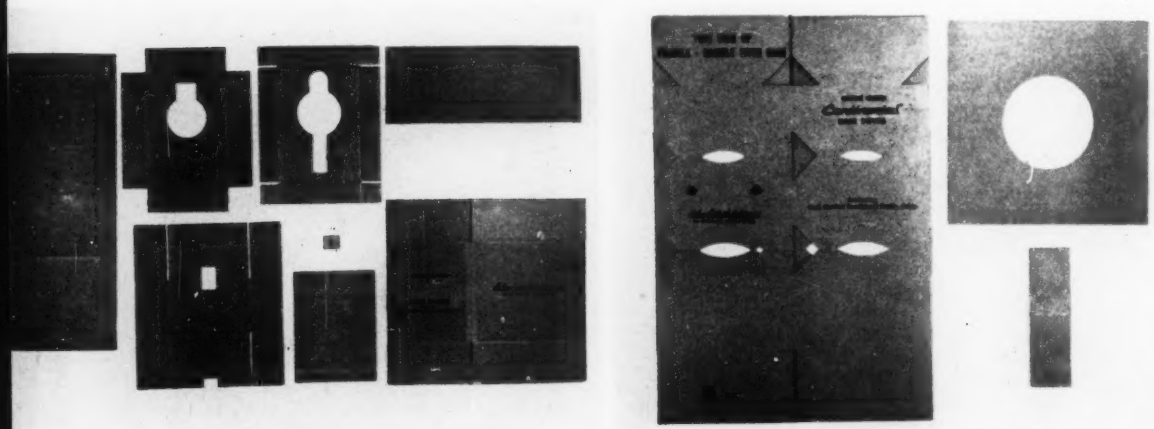
This integrated packaging line, Helene Curtis officials report, has freed much of the plant's floor space, which is now used for other purposes.

One shipping-container size serves all four Helene Curtis dryer models. Only the inner pad and inner fibre sleeve are supplied in two sizes. The former container used the same outer blank for all models, but called for five interchangeable parts and four which differed from model to model. So Helene Curtis now needs to stock a total of only five package parts instead of the previous 14 parts. This standardization allows stocking of 5,000 complete packages at one time, twice as many as before.

As corrugated costs continue to rise, packagers are under more pressure to reduce board requirements. Further, it is generally true—certainly so for Helene Curtis—that fewer package parts mean fewer production problems, reduced storage needs and easier inventory control.

SUPPLIES AND SERVICES: Shipping container designed and supplied by Container Corp. of America, 38 S. Dearborn St., Chicago 3. Steel strapping by Signode Steel Strapping Co., 2600 N. Western Ave., Chicago 47.

Board savings *are emphasized in this comparison of components of old shipper's parts (left) and new (right). In addition to economies in materials and labor, the new shipper's parts can be stocked in much less space, permitting larger orders from the supplier.*



OLD NEW

New packages *for Sears' hosiery provide clear quality gradations. Top lines (right) are in white paperboard folders lithographed in full color. Lower-priced lines (left) are in polyethylene bags printed with halftone or line drawing.*

Drawing the quality line

With high-style window folders for its higher-priced hosiery lines and polyethylene bags for budget grades, Sears distinguishes quality and aims at two different levels of competition

Aiming at two specific objectives—to counteract recent supermarket gains in hosiery sales and to strengthen its own position as a fashion-goods merchandiser—Sears, Roebuck & Co. has just completed an ambitious package redesign program for its entire line of women's hosiery. Included in the Sears program are five totally new packages, new self-selection units to display them and at least two mechanical advances in package imprinting and in package closing and sealing.

The new hosiery packages represent an important bid by Sears to win greater acceptance in the quality fashion field. It is hoped these improvements will spearhead further fashion gains. Sears is also bidding for greater hosiery sales by adding a new top-of-the-line, guaranteed hosiery group.

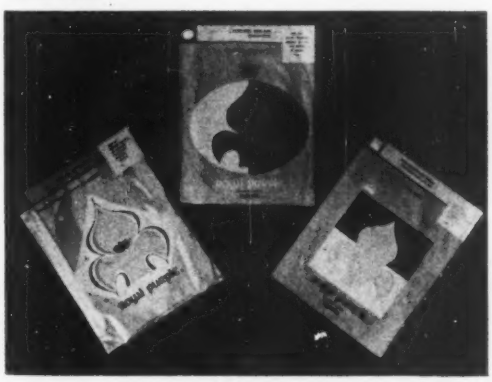
Following is the Sears thinking behind its new hosiery-packaging program:

1. Quality and glamour appeal should be dominant for lines selling at more than $1 a pair. Price of the product is strongly de-emphasized.

2. Lines selling for less than $1 should be deliberately underplayed in their packaging to contrast as sharply as possible with the higher-priced lines. This is a switch from Sears' previous hosiery packaging, in which all price lines were packaged similarly in printed cellophane bags and only minor differences in color and graphics served to distinguish one line from another.

3. The new packages should be primarily designed for self selection. But they should be equally

THE OLD



Former packages *were so similar that Sears felt no quality distinctions were apparent. Printed cellophane pouches all had unprinted area in fleur-de-lis shape.*

Hosiery boxes *have also been given quality treatment. Old box for under-$1 line (left) was tight wrapped with stripe-and-feather design in orchid, purple, blue and white. New boxes have solid-color loose wraps with restrained gold and purple printing.*

suited to Sears' still-formidable mail-order business. This is an important factor because Sears reports that women will often begin to buy its hosiery by mail and go on to become retail customers for other merchandise. Therefore, quality for Sears, Roebuck mail-order packaging is highly desirable.

Premium lines

The two highest-priced lines—new "Multifil Proportioned-fit," selling at approximately $1.50, and regular "Proportioned-fit," priced at about $1.35—are both now packaged in folders of gleaming white 11-pt. paperboard, lithographed in full color. Oval windows front and back are 1.5-mil polyethylene. While polyethylene is seldom used as a window material for hosiery due to its slight haze, Sears says that it prevents snagging that harsher films might induce and has longer shelf life than films normally used for hosiery packaging. Moreover, polyethylene's lack of complete clarity is not considered a drawback because the multiple layers of folded hosiery plus a vellum insert would not give a true indication of color anyway. Customers choose colors from an assortment of unpackaged hosiery tastefully displayed on the top of the self-selection unit.

Both the "Multifil" and the regular "Proportioned-fit" packages use the same high-fashion illustration. The background colors, however, are, respectively, aqua and rose to give a subtle distinction between the two hosiery lines.

While the well-established Sears brand name, "Royal Purple," appears on both packages, it is not so heavily emphasized as previously. Sears uses this technique for such products as hosiery, which have no non-Sears competition in its stores.

Both the "Multifil" and the regular "Proportioned-fit" packages carry four tiny outline drawings of women of various heights. To make quick size-selection easier, the proper figure for the size contained in any given package is printed in solid black, while the others are in outline form only. Appropriate descriptive copy for customers' height and weight accompanies this illustration.

On the backs of both packages, copy stresses quality, a large window shows the welt construction and a color chart of weights and body structures aids the shopper in selecting her correct size. The price is not mentioned at all.

The third over-$1 line is also in a paperboard

Visual distinction *is evident in display unit, where paperboard folders (left) contrast sharply with polyethylene bags (right). New display units hold the merchandise high enough so that stooping isn't necessary. Reserve stocks are contained in orderly arrangement directly beneath displayed stock for customer convenience and fast shopping.*

folder. A complete change in graphics sets this hosiery apart from the two "Proportioned-fit" lines. Informative copy is also handled differently. For the top two hosiery lines this copy, at the upper left of the folder, is printed in black directly on the white paperboard. For the No. 3 line it is done in black and white against a colored area of different size and shape, distinguishing seamed, seamless, sheerness, etc. This is the same technique for handling informative copy as is used on the under-$1 lines. So quality gradations, while subtle, nevertheless quickly make their points on these packages.

Under-$1 lines

Subtlety is abandoned at the $1 level. Hosiery selling for less than this amount is packaged in printed 1.5-mil polyethylene bags. The proportioned-length line has a peach and white bag with a halftone illustration. The remaining hosiery selling for under $1 is in a yellow and white bag with a line drawing. Both have unprinted ovals front and back to show a portion of the stocking. The lowest-priced line states flatly that this is "quality at budget prices"—no more, no less. Lined up side by side in the display unit, the contrast with the higher-priced hosiery is obvious and, Sears hopes, compelling.

Set-up box redesign

Some Sears' specialty hosiery items are still boxed only and larger stores will also continue to carry some lines boxed, with standard tissue and band, for those women who prefer personal service. These boxes have also been redesigned.

A former rather busy graphic design and tight wrap have been replaced by solid-color boxes in aqua, orchid and white with only a small, restrained design, an embossed surface treatment and a loose wrap. The new effect connotes much higher quality.

The new design program has been in the works for more than two years, during which time the company's Visual Merchandising Department, Packaging Division, reviewed hundreds of competing and potential Sears' packages.

Self selection

With its new hosiery packages, Sears has put more types and price ranges into self selection than ever before. This decision was made following comparison of 1945 and 1958 surveys of Sears customers. In the initial survey, 63% of respondents said they would buy hosiery in sealed packages; 13 years later, 88% indicated this willingness.

The 1958 survey also indicated that 46% of respondents customarily bought stockings three pairs at a time, compared with only 15.5% in 1945. Multiple packs were considered as a sales stimulant, but the final decision remained with single pairs for fear that enough impulse sales of single pairs would be discouraged by multipacks to affect adversely the over-all sales total.

Folder closing and sealing *are started when weight of folder on plate of machine kicks microswitch, activating gluing and plowing mechanism. Glue adheres only to the unvarnished portions of folder flaps for easy-open feature.*

Nevertheless, Sears feels its new display units for hosiery do encourage multiple purchases by bringing all packages nearly to eye level and by providing storage space for each line, size and color directly beneath its displayed counterpart. The previous display unit devoted so much space to display that extra stock was not available in sufficient quantities. The new packages are so distinctive that they can be more effectively displayed.

Product inspection

On none of the packages does Sears specifically invite the customer to open the package for inspection. However, this can be done without making the package unsalable. The paperboard folders have adhesive applied on the top flap in a series of dots for a seal that is secure [*Continued on page 258*]

SUPPLIES AND SERVICES: Printed paperboard folders by Lassiter Corp., 350 Fifth Ave., New York 1, using West Virginia's "Britepak" board with windows of Visking's polyethylene. Also by Lassiter: polyethylene bags, made of Visking's film; inserts, using S. D. Warren's 70-lb. antique vellum and Springhill 134-lb. vellum Bristol; box wraps made of Champion's 60-lb. "Kromekote" and S. D. Warren's 60-lb. litho-coated stock. Set-up boxes by Carolina Paper Box Co., Burlington, N. C. "Adapter kit" imprinting equipment by Addressograph-Multigraph Corp., 1200 Babbitt Rd., Cleveland 17. Flap-closing and sealing machine by Midwestern Tool Co., 3934 W. Diversey Ave., Chicago 47. Synthetic resin adhesive by Swift & Co.'s Adhesive Products Dept., 4115 Packers Ave., Chicago 9.

PACKAGING PAGEANT

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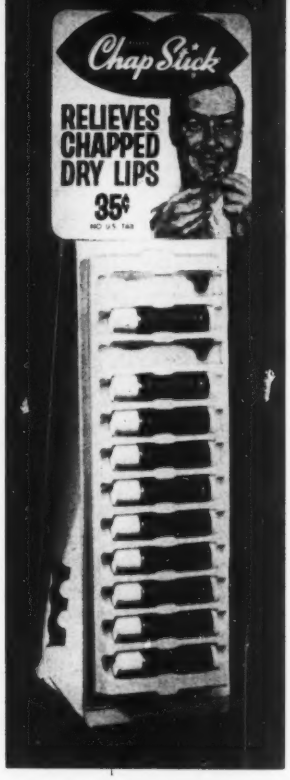

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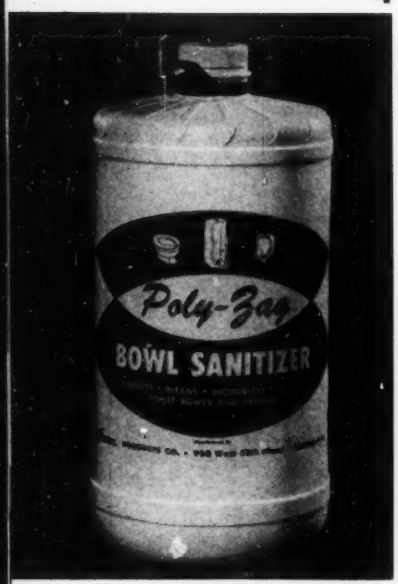

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6 NEW OLD

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1 A graceful, private-mold glass jar for Robert A. Johnston Co.'s hot fudge is designed for dining-table use, with decorative motif molded in the shoulder. Hour-glass shape is planned for easier handling and broad base resists tipping. Jar, Armstrong Cork Co., Lancaster, Pa. "Twist-Off" cap, Continental Can's White Cap Co., Chicago. Paper label, Philipp Lithographing Co., Milwaukee.

2 A new confectionery package combines the advantages of a vinyl-chloride tray and a transparent film bag with paperboard header. Fifteen Coconut Bon Bons by Bunte Bros. Chase Candy Co. are protected in individual compartments in tray. Unprinted cellophane bag allows full product visibility; sell copy is on printed paperboard header. PVC tray, Pantasote Co.'s Panta-Pak Div., New York. Bag by Special Bag Mfg. & Labeling, Chicago, using Du Pont "K" film. Header, Greeson Co., St. Louis, Mo.

3 Plastic and paperboard are combined to make an inexpensive, 4-in.-wide counter merchandiser for Chap Stick, a health and beauty aid by Morton Mfg. Corp.'s Chap Stick Div. Twelve Chap Sticks fit into runners molded of 15-gauge, high-impact polystyrene that attach, front and back, to pyramid-shape paperboard base. Display, Einson-Freeman, Long Island City, N. Y., using Monsanto polystyrene.

4 Convenience in use is provided by a molded polyethylene handle fitted around the neck of this 1-gal. semi-rigid polyethylene container for Hysan Products' Poly-Zag bowl sanitizer for institutional and industrial use. Container has swirled blown-in decorations at the shoulder. "Plasti-Grip" handle, Sun Industries, Cleveland. Container and screw-top closure, Owens-Illinois, Toledo 1.

5 A handy pull-out, push-in dispenser cap has been adopted by Henry Thayer Co. for Tru-Lemon lemon juice in squeezable lemon-shaped polyethylene container. Molded in two parts of medium-density polyethylene, cap locks permanently together and onto container. When cap is pushed in, liquid will not dispense; pulled out, cap allows liquid to flow when lemon is squeezed. Cap made by L. T. Kinder Plastics, Chicago, and designed by U. S. Cap & Closure, Chicago. Container, Plax, Hartford, Conn.

6 Objective of General Electric's new four-bulb packaging is illustrated by package for inside-frost light bulbs. Packages are smaller in size, easier to stack and handle, have improved wattage and brand identity on all sides, with prominent price marking. Yet they are designed to retain familiarity with former packs. Improved bulb protection is achieved with a new inner two-bulb sleeve that replaces former die-cut hole with interior corrugated flap to separate bulbs. Color coding is in accordance with bulb tints. Two-bulb-pack construction developed in conjunction with Mead Packaging, Atlanta.

7 Frank Fehr's Brewing Co.'s six-pack for 12-oz. glass bottles of beer are packaged on the same high-speed, continuous-motion multi-unit machine that handles metal cans. Output is in excess of 600 bottles or 100 six-packs per minute. Change-over time from cans to glass is reportedly less than an hour. Carton—of no-glue, no-staple, 100% virgin-kraft construction—has a patented locking and aligning device, with die-cut pull holes on bottom for a tight, firm lock. Cluster-Pak "600" machine and carton, Mead Packaging, Atlanta.

8 New 3-mil polyethylene bags, made of a specially modified resin, are reported by Spring Kist Sales to have eliminated package breakage previously encountered for its line of free-flowing frozen fruits. All-over four-color flexographic printing is said to reduce product color loss by cutting down ultra-violet light exposure from freezer cabinet's neon lights. Bag holds 1¾ lbs. Bags, Texas Plastics, Elsa, Tex., using U. S. Industrial Chemicals resin.

9 Yardley's stand-up collapsible metal tube for a new anti-blemish cream, "Fair and Clear," was first used in the company's foreign market. This U. S. version has a special over-sized rigid urea cap, imported from England, which fits snugly on the rim of the shoulder. Screw-on lid, formed on inside of cap, attaches to tube's 5/16-in. neck aperture. Lithographed tube has an internal coating of modified epoxy resin. Tube, Peerless Tube, Bloomfield, N. J.

10 Eye-catching effect is achieved by eye-shaped cut-out showing one of actual tablets in upgraded package for DePree Co.'s non-narcotic-type sleeping tablets. New prestige packaging consists of cartons printed in a bronze and gold design on 0.018-in. coated stock. Inside, tablets are unit packed in protective transparent film. Carton, Continental Can's Boxboard & Folding Carton Div., New York.

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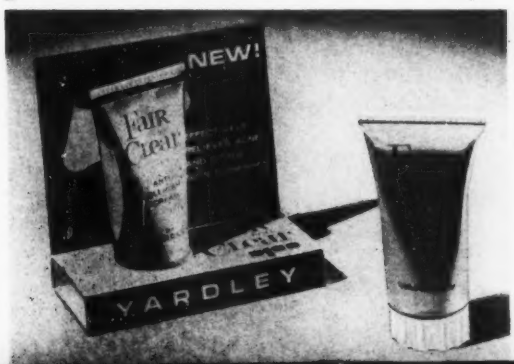

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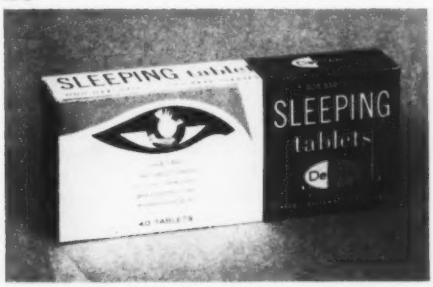


Low-cost polystyrene jar

Ultra-thin wall construction provides injection-molded container for Keystone's hair dressing that uses 74% less material than original container, saves 25% in shipping costs

Improved manufacturing techniques for plastic containers coupled with a better knowledge of how to design in new plastics have brought about a sharp decrease in the weight of such packages. As a result, costs, in a great many cases, have been cut to a level highly competitive with containers made from more conventional materials.*

The trend is illustrated significantly by the development of injection-molded polystyrene jars for Long Aid cream hair dressing by Keystone Laboratories, Memphis (45 employees, $950,000 gross). Starting in 1951 with a switch from a glass jar with metal cap to an all-polystyrene container, the company has progressed in four stages over a nine-year period to a new thin-wall polystyrene package that affords exceptional strength and beauty of design with 24% less material than its predecessor, 37% less than the first plastic jar and 74% less material than the original glass package.

These savings and the present low price of polystyrene resin have brought the price of this plastic jar, Keystone reports, within 1 cent of the cost of a similar 4-oz. glass jar with label, metal cap and more-expensive shipper. With savings in shipping charges running better than 25%, Keystone concludes that the new package is a logical choice.

Secret of this latest, featherweight jar, which weighs only 32 gms. when empty, is a new injection-molding process employed by the supplier—a "virtual manufacturing breakthrough. Essence of the process is a center-gating technique that enables an

*See "Economy in a Plastic Cup," MODERN PACKAGING, Aug., 1960, p. 91.

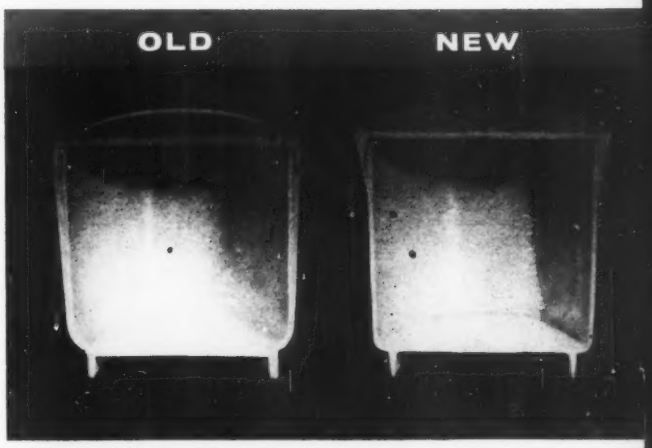
Progress in design *of polystyrene jar for cream-type hair dressing in the four stages of development, starting with switch from glass jar (left) to a plastic package in 1951. Walls were lightened in 1953 and container was increased in size with the addition of a foot in 1956. New plastic jar (right) achieves the lightest weight for its size and incorporates graceful curves and fluting to boost appearance.*

ultra-thin and uniform cross section to be maintained with the use of medium-impact polystyrene. Savings of material has resulted in a reduction of 2 cents in the price of the container, yet are said not to reduce the strength of the jar or its performance.

The achievement is the result of developments in four distinct steps by several suppliers.

1. The first polystyrene jar replaced a glass container that weighed 122 gms. and held $2\frac{5}{8}$ oz. of product. The plastic package—with a 3-oz. capacity—weighed only 51 gms., a reduction of 58% in container weight. In addition, the new tapered container was considered to be more impressive in appearance. Height was increased by $\frac{5}{8}$ in. to $2\frac{1}{2}$ in. and diameter boosted by $\frac{1}{4}$ in. to $2\frac{5}{8}$ in. The paper label, with its small outmoded design, gave way to a bold, offset-printed pattern in black. The basic plastic jar was soft pink, which has been retained in all subsequent jars for the product.

2. The second plastic jar with further improvements was introduced in 1953. The weight was cut to $31\frac{1}{2}$ gms., while the net content was raised to $3\frac{1}{2}$ oz.—a reduction of 47% in container weight per ounce of contents, which produced an even more efficient package. The necessary changes in the bulk of the package to achieve this weight reduction were scarcely noticeable, since the height was retained and the slimmer, straight body ($2\frac{1}{4}$ in. in diameter) was offset by an oversized cap. The printed design was changed to a bright blue, which the company has used ever since.



Thin-wall construction *and uniform thickness of new jar, made by a special center-gating technique, is graphically compared with previous plastic container (left) in these cut-away views. Cap and foot of the jar have also been reduced in thickness.*

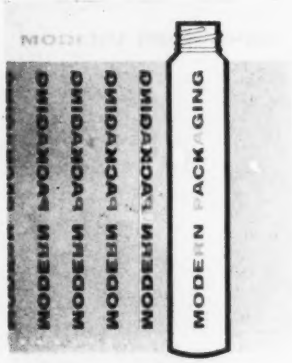
3. The third polystyrene package, in 1956, incorporated major changes: addition of a foot on the container and a return to the tapered body. Though these modifications increased the weight of the container to 42 gms., they brought the shape of the package into line with modern design thinking and produced a jar that improved shelf impression over either the original glass container or the two subsequent plastic packages. Net content was retained at $3\frac{1}{2}$ oz., and both height and diameter of the jar were set at $2\frac{1}{2}$ inches. The body taper was produced by increasing the wall thickness of the jar from bottom to top. And the foot was heavily fluted for a decorative effect.

4. The present jar, introduced recently, has several significant differences in structural and decorative design compared with its immediate predecessor. Most important is the fact that a uniform cross section is maintained in the walls of the new jar—equal to the thinnest section in the previous container. This permitted a cut-back in weight of this larger container to virtually the same mass as that achieved in the plastic jar in 1953, re-establishing a low container weight per ounce of contents for a maximum of packaging efficiency.

While internal dimen- [*Continued on page 253*]

SUPPLIES AND SERVICES: Molded jar and cap by Braun-Hobar Corp., associate of W. Braun Co., 12132 W. Capitol Dr., Milwaukee 10. Design by Nathan Lerner Design Associates, 500 W. Fulton St., Chicago.

GREAT PACKAGING DISCOVERIES—18



THIS MONTH'S COVER

Heat-transfer printing

A recent revolutionary development that started with cellophane now decorates plastic bottles by the millions and its potentials for other materials are only beginning to be fully realized

Toward the end of 1955, the Dennison Mfg. Co. introduced a process for transferring a printed coating from a roll of paper backing to a sheet of cellophane—something like a decalcomania, yet very different in that the special thermoplastic and multicolor inks are released by heat and pressure.

Today, just five years later, the possibilities of this revolutionary new process of printing by heat transfer on film, paper, plastics and metal containers have become so intriguing that Dennison stock—usually a steady nonfluctuator—recently shot up 10 points. The company's Framingham, Mass., office has been deluged with visitors from the financial world and the telephone rings all day long with inquiries from prospective users.

In no small part, this sudden interest has been occasioned by the breakthrough of low-cost, semi-rigid, blow-molded polyethylene bottles and the efficiency of heat-transfer printing to decorate them at high speed and low cost in multicolors in a single pass.

On the basis of present orders, Dennison estimates that more than 300 million plastic bottles will be decorated by the new process during 1961. This number is greater than the total estimated blow-molding capacity in 1959. Specially designed machines for applying the process have been installed or are on order from every major blow molder. Some molders will soon be operating whole batteries of the machines to label bottles for detergents, glues, shoe polish, insecticides, nasal sprays, shampoos, household chemicals, automotive supplies and other products.

And this is not all that is attracting attention to this *Great Packaging Discovery*. Within months, Dennison says, heat-transfer printing will be used to put deal- and special-offer promotions on regular printed cartons, eliminating the need for frequent plate changes. Substantial progress is also being made in adapting the technique for the decoration of glass containers using frit for the transfer design and offering the long-lasting quality of fired-on ceramic labeling—a development that is being watched closely by soft-drink bottlers.

The concept of heat-transfer printing might have remained dormant for years except for the initiative of Ridgely G. Shepherd of Dennison's chemical research. While trying to develop a less expensive but more efficient heat sealing adhesive to secure roll-type paper labels to cellophane wraps, he made a fascinating discovery. When one of the numerous formulas he had developed for use as a coating on the back of paper label stock was activated by heat and pressure, it transferred itself completely from the label stock to the cellophane.

A less imaginative chemist might have passed over this result as just one of the failures to be encountered in the pursuit of an objective. But the phenomenon intrigued Mr. Shepherd. He started experiments in a new direction. He mixed pigments with various vehicles. He applied the pigments in several designs over the newly formulated release coating on a paper carrier. He placed the carefully prepared samples, pigment side against the cellophane, and subjected them to heat and pressure in just the right combination. The release coating transferred itself to the cellophane in the exact pattern of the sample, except in reverse, leaving the carrier paper clean.

Elated, he showed the results to Robert B. Hulett, then Dennison's manager of product development. Together, these two men envisioned the possibilities of the Therimage development, as the new process is appropriately called. Here, perhaps, was a way for a packager to have the advantage of attractive and durable multicolor printing with the versatility of roll labeling. The finished product would resemble rotogravure-printed cellophane with inks that could not be removed under severe use conditions. Yet the user would have

no worry about printed-film inventories; he would have to stock only plain or stock designs—plus rolls of the transfer labels.

Mr. Hulett took the idea to James T. Dennison, director of research and engineering. Development would require a budget for further research and engineering. It was one thing to discover a chemical principle; another to engineer mechanical equipment for its application. Fortunately, management shared in the enthusiasm and a key to the progress was an appropriation to build a device for applying the transfer printing.

In a relatively short time an entirely new business was added to the six existing manufacturing divisions comprising Dennison Mfg. Co. Therimage was placed under the wing of Howard C. Weeks, vice president responsible also for Box and Gummed Paper Divs., with Mr. Hulett as manager.

Dennison was first to benefit from the invention by its own use of the process for identifying the cellophane wraps on gift-wrapping papers. Then a strange thing happened. After demonstration of the technique at a packaging show, the process attracted attention from an entirely unexpected quarter. Could transfer printing developed for flat films be used on blow-molded polyethylene bottles? Silk-screen and offset processes were slow and expensive. If multicolor legends and designs gravure printed in reverse order on a paper strip could be transferred to a polyethylene bottle by means of a release agent, it would cut multiple passes through a printing unit down to just one to achieve the multicolor effect.

At this point, mechanical equipment was available for applying the heat-transfer process only on flat surfaces. If Dennison was to win the plastic-bottle business, the company would have to develop application equipment fast. The job was assigned to Carl A. Flood, the company's chief design engineer, largely responsible for getting the development on stream.

First he produced a semi-automatic machine to label filled oval bottles of LePage's glue at 50 bottles per minute. Next, he originated a way to print bottles prior to filling by means of a device which momentarily introduces air pressure into each container to make it rigid. Finally, he designed fully automatic machines to print labels on oval bottles at speeds of 100 per minute and to apply wrap-around transfer labels to round bottles at 65 per minute. The machines can even be modified to transfer labels to cone-shaped bottles. And use of post-heating ovens impart gloss to the transferred printing.

The development is a remarkable example of teamwork by an entire staff and management with vision to see the possibilities and take the risks.

Essence of process *is demonstrated by Chemist Ridgely G. Shepherd, who discovered it. Multicolor design, reverse printed on release coatings, transfers clean from supercalendered paper backing strip to test medium as copper drum, heated with low-pressure steam, is passed over it. Procedure is used for "proofing" production runs.*

Automatic machine *applying wrap-around transfer labels to first round Swan bottles at speeds of 65 per minute illustrates mechanical principle. At left are feed and take-up rolls for the paper-mounted labels. Containers pass continuously by conveyor into turret (center), where they come in contact with the vertically mounted, hot-die transfer mechanism.*

A parade of pouches

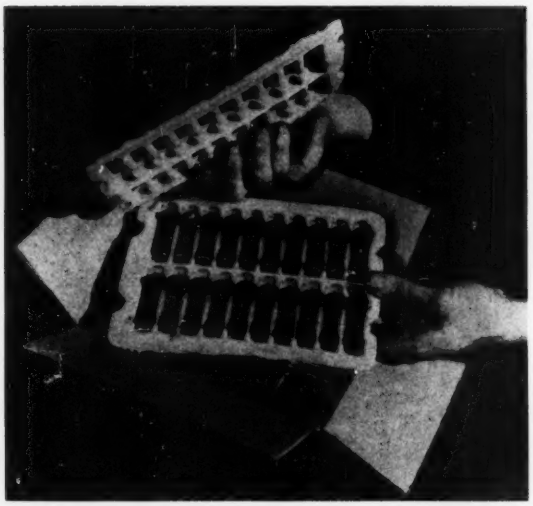
A battery of three automatic pouch former-filler-sealer machines has quadrupled the speed of packaging frozen pastry products at significant savings in labor and material costs, says Pepperidge Farms' Frozen Food Div., Downingtown, Pa. The three new units (a fourth is held in reserve for peak production periods) are reported to operate at a cumulative speed of 240 pouches per minute, compared with 60 per minute in a former manual procedure. Each of the machines is set up to run one package size, thereby eliminating down time for change-over.

Frozen pastries are hand fed in pairs to the infeed station of each machine, where a polyethylene-coated paper pouch is formed and sealed around the products. This pouch-forming operation reportedly does not subject the frozen items to harmful heat or pressure. As filled pouches are deposited on an outfeed conveyor, operators fold them over for delivery to automatic cartoning equipment.

According to the packager, the newly installed automatic equipment achieves labor savings of 60% and material savings of 30%. *"Flexopaker" pouch former-filler-sealers by Battle Creek Packaging Machines, Battle Creek, Mich.*

COST

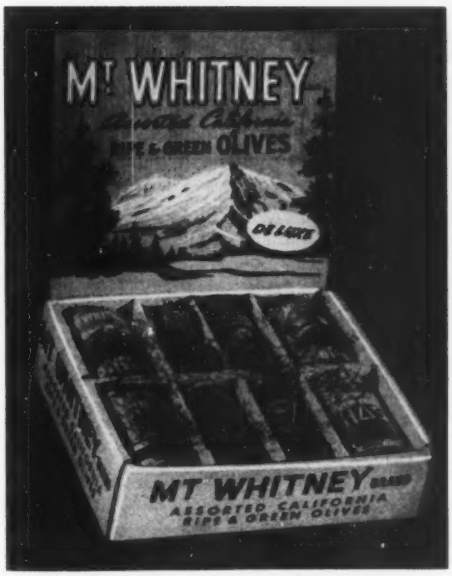
Double-duty molded-pulp cushioning tray cuts costs 20%



A compartmented molded-pulp tray that does double duty — first to facilitate operations on the production line, then as protective interior packaging — is reported by Transistor Electronics Corp., Minneapolis, to cut more than 20% from the cost of packaging transistor-driven neon indicators. The tray replaces loose cushioning material which formerly was wrapped around each of the delicate parts.

The low-cost molded-pulp tray now used by Transistor Electronics contains 20 compartments, contoured to product shape. As indicator components are assembled on the production line, they are placed in the tray and sent to the testing department. After testing, the items are returned to the tray for delivery to the shipping department, where filled trays are stacked five high and placed in a corrugated container. The carton then is taped and labeled for shipment. In the former protective-packaging operation, says the company, only 10 indicators could be packed in a carton slightly smaller than the one that now holds 100 indicators in molded-pulp trays. Handling and packaging also have been speeded up measurably. *"Tekmold" molded-pulp tray by Bemis Bro. Bag Co., 111-H N. Fourth St., St. Louis 2.*

Savings via simplicity

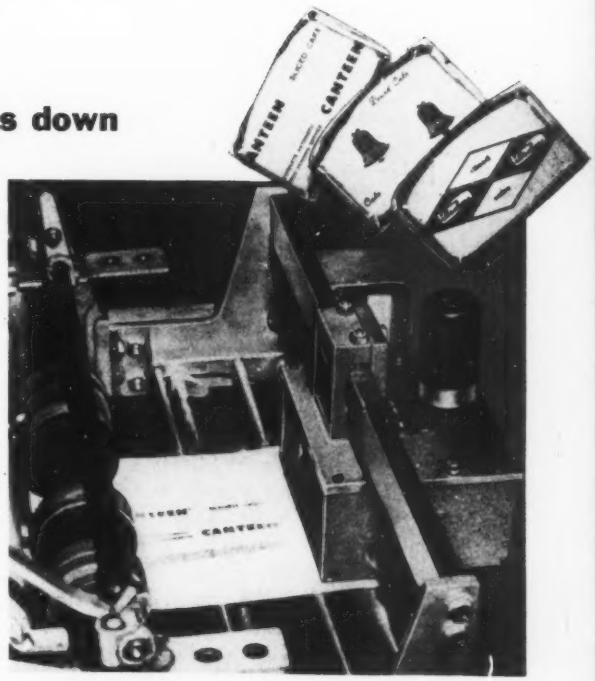


Package simplification that substantially reduces material costs also is paying off in easier container assembly and elimination of an inventory problem, reports the V. R. Smith Olive Co., Lindsay, Calif. The company formerly packed a gift assortment of olives (in cans and glass jars) in a five-piece container consisting of an inner box, two sets of nested partitions, a separate lid and an outer shipping sleeve. It was a costly, difficult-to-assemble unit that required close control of package-part inventory to meet production schedules, the company says.

Smith's package redesign has cut the number of container parts to three—a hinge-lidded corrugated carton, a partitioned divider unit and a slotted kraft shipper. According to the packager, the new corrugated gift-pack container not only can be set up in a matter of seconds, but it also provides sturdy protection that virtually eliminates product damage in transit. For additional gift appeal, the new corrugated carton makes use of the high-quality printing values of a bleached white kraft outer liner. *Corrugated carton and kraft shipper by Crown Zellerbach's Gaylord Container Corp. Div., 111 N. Fourth St., St. Louis 2.*

CUTTERS

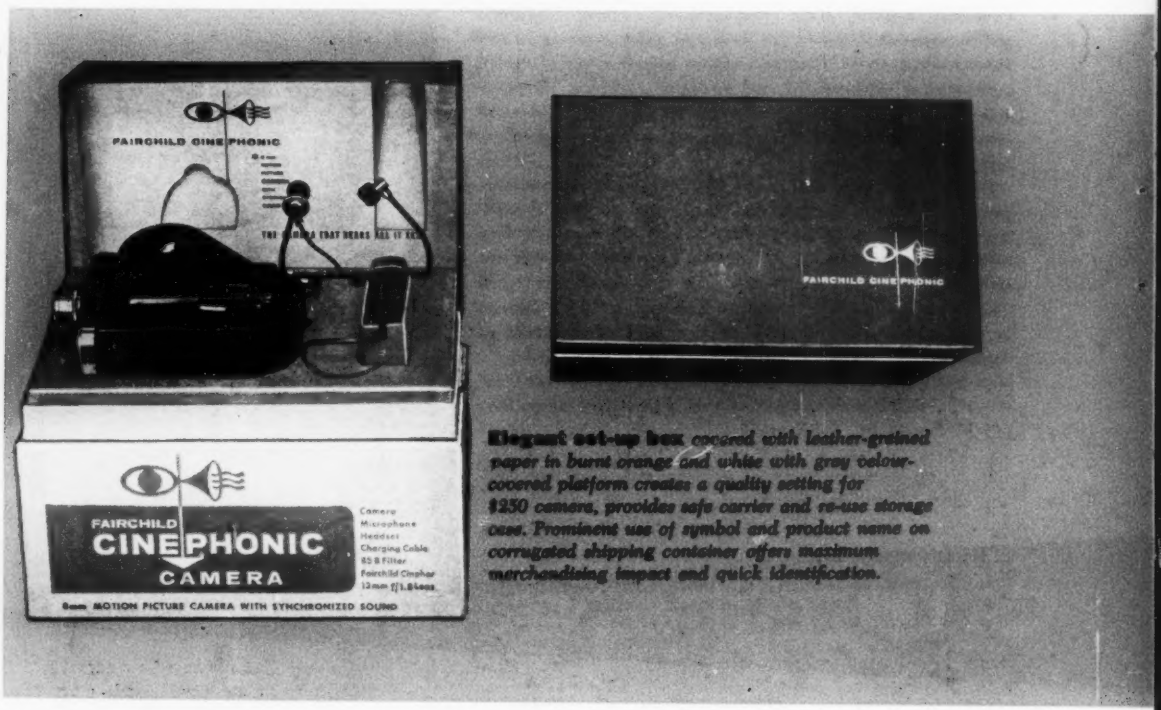
On-the-run imprinting keeps costs down



Contract packagers and companies packaging a variety of products under different and names could benefit from the experience of Chimes Cake Co., New York, which has achieved new efficiency and economy in its wrapping operations via the adoption of a versatile automatic imprinting attachment. The company specializes in packaging sliced cake and cookies in private-brand cellophane wraps for other bakeries and for industrial and vending-machine outlets.

Because the order to be filled for an individual customer at any one time is relatively small, it is impractical for Chimes to use pre-printed wraps, which present problems of prohibitive costs, maintenance of huge inventories and the need to shut down machines for web change-over. The packager skirts these problems by using an automatic imprinting attachment mounted on a standard wrapping machine. Thus, Chimes can buy rolls of unprinted cellophane, which are imprinted with appropriate brand copy and design during the wrapping operation. Interchangeable rubber dies limit design change-over time to a few minutes, says the packager. *"Rolaprinter" imprinting attachment by Adolph Gottscho, Hillside, N. J. Cellophane by Du Pont, Wilmington 98, Del.*

HARD-WORKING



Elegant set-up box *covered with leather-grained paper in burnt orange and white with gray velour-covered platform creates a quality setting for $250 camera, provides safe carrier and re-use storage case. Prominent use of symbol and product name on corrugated shipping container offers maximum merchandising impact and quick identification.*

The use of integrated packaging and point-of-sale material to create the visual merchandising concept necessary to introduce a revolutionary new product is impressively illustrated by Fairchild's program for Cinephonic Eight—a new 8-mm. home-movie camera with synchronized sound.

The way it was accomplished is well worth study by any firm that has an unusual new product to launch. Fairchild's problem was manyfold.

1. Although the company had been producing industrial cameras for many years, Fairchild Camera & Instrument Corp., Syosset, N. Y., (3,600 employees; $47,000,000 gross) was now entering the amateur market for the first time.

2. The precision camera and its price bracket ($250) demanded packaging with efficient protection and quality appearance to serve as a re-use case and to provide gift appeal.

3. Inasmuch as the camera could *hear* as well as *see*, packaging had to dramatize this new feature.

4. Coordinated point-of-sale material was required to demonstrate the sight-sound combination of the Cinephonic Eight and to suggest its uses.

5. A dozen or more accessory items—recording projector, microphones and microphone stands, special lenses, film, exposure meter—had to be in packages designed to complement the program.

6. And, finally, over-all family identity had to be extended to shipping containers.

To accomplish these objectives, Ralf Shockey & Associates, merchandising consultants to Fairchild, called on an independent package-design firm.

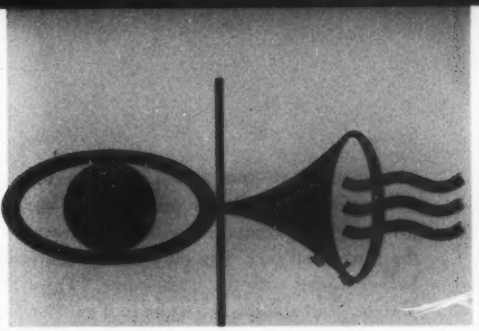
The designers' first step was to develop a symbol that would give the new camera and its accessories a strong graphic personality, easy to recognize and to illustrate its use, as well as to reflect the high technical standards of Fairchild's products.

The result, after hundreds of preliminary sketches, is a symbol comprised of a stylized line drawing depicting a human eye and a loud speaker placed on either side of a vertical staff, designed to associate sight and sound.

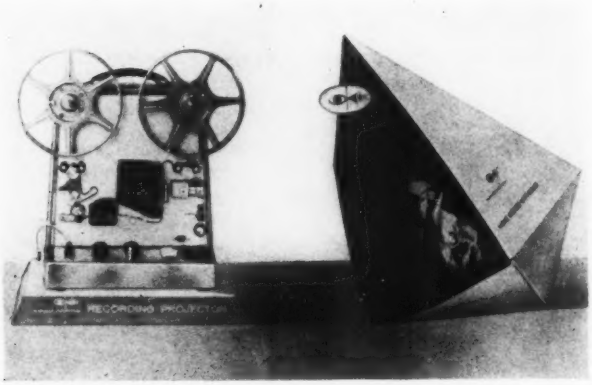
For the surface of the set-up box to house the camera, the designers chose a leather-grained em-

GRAPHICS

Fairchild's packaging for a new home movie camera with sound demonstrates see-hear photography for amateurs. shows how coordinated program can do full job of visual merchandising

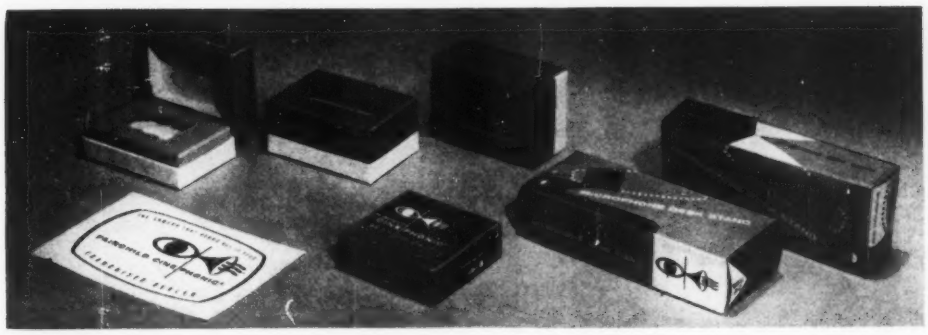


Human eye and microphone *trademark suggests camera's sight-sound feature.*



Projection screen *for counter demonstration, shown with recording projector, is ingeniously made of paperboard by means of folding-box construction. It's light in weight and easy to ship knocked down.*

Pilferage is discouraged *by pyramid-shaped counter display into which camera is locked by paperboard tabs. Shoplifter would have to take entire thing to make away with the product.*



Family design *carries over to packaging for all accessory items—microphone stands, lenses, film, exposure meter.*

bossed paper to give a rich appearance. The color scheme is a carefully chosen shade of burnt orange for the cover, combined with white for the base of the hinged-lid box. The only decoration is the symbol combined with the trade name, "Fairchild Cinephonic," hot stamped in white and gold on the lower right-hand corner of the cover. The burnt orange, it was reasoned, is brilliant enough to make the package stand out for retail display, yet sufficiently restrained for a product of high quality.

For the interior of the box, the designers developed a sturdy, die-cut platform covered with velour-flocked gray paper. This platform serves as a pleasing background for display, as well as a carefully engineered protective cushion during shipment.

The orange and white color combination, with gold and black for lettering and illustrative treatment, is carried throughout the 21 different packaging and promotion items in the design program.

Thus every unit is identified as a member of the new Cinephonic family and ties in strongly with all advertising for which the theme is, "World's only home movie camera with sound."

An interesting part of the program is the unusual construction of the display pieces, all made of paperboard because of Fairchild's economy policy and planned changes in the near future. One of these, of novel-shaped, folding-box construction, incorporates a well-shaded projection screen and housing for effective counter demonstrations. Another—also of folding-box construction—is a pyramid-shaped display unit for the camera, which sits in the base and is held in place by two paperboard locks. The size of the unit, plus the locking construction, are calculated as a practical deterrent to shoplifting. A third paperboard unit designed for window and outpost display is a self-sufficient exhibit, featuring the camera and projector in picture form, telling the Cinephonic Eight story at a glance. These units are light in weight and of knock-down construction for easy shipping.

All corrugated shipping containers are designed for maximum merchandising impact and quick identification by prominent imprint of the Cinephonic symbol in orange across the top and sides.

Other elements of this packaging program include an embossed gift certificate, a mailer for film processing, hang tags, a display sign and decal labels.

SUPPLIES AND SERVICES: Design program by Ehrman & Reiner, 9 E. 45 St., New York 17. Set-up boxes by Wallace Paper Box, 5207 Flushing Ave., Maspeth, Long Island, N. Y. Folding boxes and paperboard displays by Acme Folding Box, 1495 Herkimer St., Brooklyn 33.

Effectiveness of design *is dramatically illustrated by mass display of shipping containers, instantly recognizable.*

Window or outpost unit *tells story pictorially without merchandise, but features camera and projector.*

Peel-open containers *for Unilever's Planta margarine utilize specially coated PVC and high-frequency sealing technique for hermetic bond with low pull strength. Plug-type lid gives tight reclosure.*

MARGARINE IN PVC

With its own development of in-plant thermoforming, filling and sealing of plastic-sheet containers. Unilever adopts easy-to-open coated PVC 'dish' gang filled and sealed on unique rotary unit

Thermoformed plastic packages—made, filled and sealed on continuous lines—are scoring a new success in Europe with the adoption of an hermetically sealed polyvinyl chloride "dish" for Planta margarine by Sais Margarine Fabrik of Rapperswil, Switzerland, a subsidiary of giant Unilever, N.V. Now being given substantial test-market distribution in Zurich, after having undergone two years of preliminary trials in Portugal, the colorful rectangular-shaped plastic package marks a significant volume application of thermoforming techniques by the largest margarine packager in Europe.

This is the second recent introduction of this type of package in Europe and it differs from the first in that this development was carried out, with a different type of machinery, by the packager company rather than by a supplier.

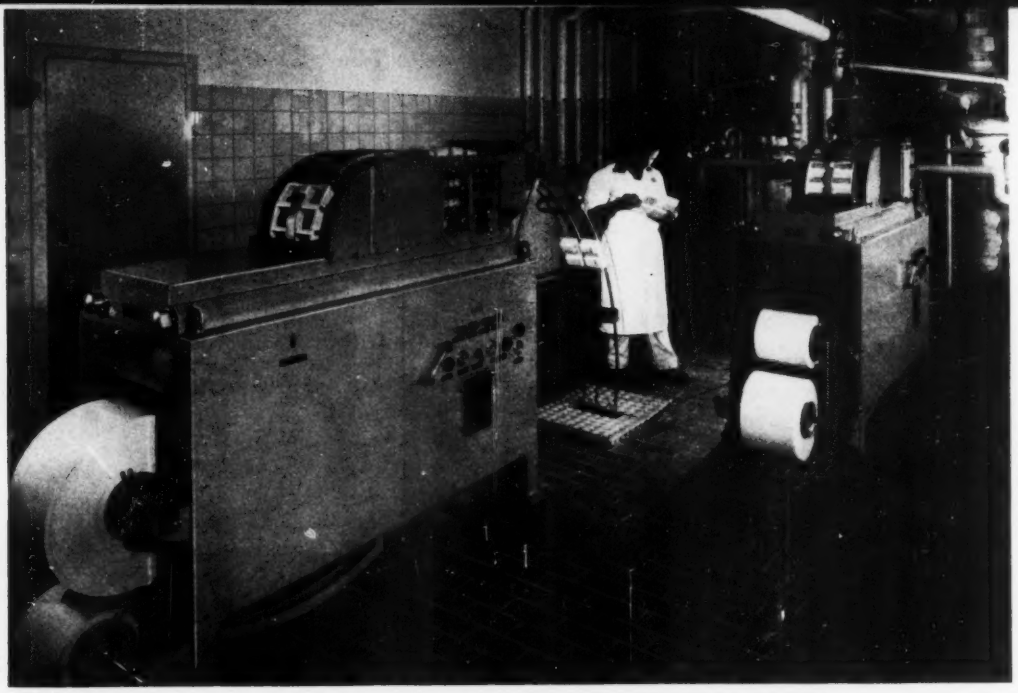
Instead of straight-line equipment* initially used to form, fill and seal such semi-rigid plastic sheet packages, the new technique utilizes an unusual rotary filling machine that handles the plastic cups in groups of four to speed the filling of the highly viscous margarine. Also, a high-frequency sealing technique is combined with material that is specially coated to insure a peelable seal and easy opening of the hermetically closed cups.

The new thermoforming machinery was engineered and built entirely by Unilever, incorporating features which the company believed advantageous.

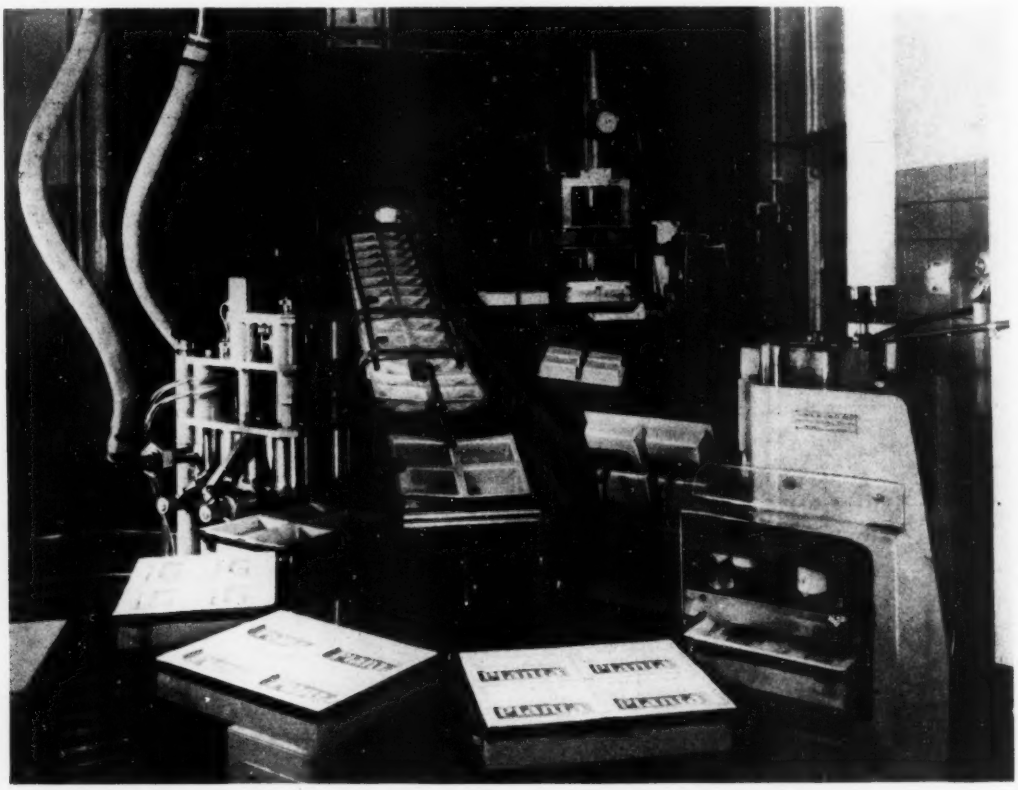
Unilever developed its 3.3-oz. container as a result of market research among European housewives, which disclosed that they prefer a rigid container for "bulk" margarine over the conventional aluminum-foil wrap for formed bars.

The PVC sheet used for this package is non-plasticized and non-oriented, and its vacuum-forming properties are said to have been improved by addition of other resins. Shrinkage during heating is avoided by use of the non-oriented material. In

*See "Form-Fill-Seal in Plastic," Modern Packaging, March, 1960, p. 150.



Lids and bodies *are fabricated in the packager's plant on two roll-fed vacuum-forming machines, then are conveyed to a lower floor for subsequent packaging operations.*



Filling and sealing *are accomplished on counter-clockwise rotary table. Plastic "dishes," in groups of four, are transferred to table by ram (center) and pass under four-spout piston filler (left). After hand lidding, they move to high-frequency sealer (right). Inverted onto a conveyor by ram action (right center), completed packages travel to die cutter (rear) that severs individual units.*

addition to the natural grease resistance of PVC, this sheet contains an ester-type organic stabilizer that is not soluble in fats and is said to be approved by local health authorities.

The body of the container, formed from 16-mil PVC sheet, is bright yellow—both for appearance and to protect the contents from light. The lid, of 10-mil opaque white sheet, is gravure printed with the Planta trademark in a bright blue. Since the containers are stacked during both storage and display and only the top of the upper container is likely to be exposed to light for a short period before it is sold, the opaque material is considered sufficient protection against light deterioration.

The base of the new package is slightly tapered and has a flange around the rim to which the shallow-formed lid, also flanged, is sealed.

Forming and sealing operations

Both parts of the container are vacuum formed on separate machines on an upper floor of the Sais plant and are then routed to the new filling machine. There, the plastic bases, still joined in groups of four, are transferred mechanically to the rotary table and pass under a piston filling unit. The lids, which arrive at this point separately, are added to the bases by hand and the completed package is indexed to the high-frequency sealing unit.

Secret of the sealing technique is a special coating on the under side of the lid, which enables it to be sealed satisfactorily to the PVC base with a high-frequency current. At the same time, the coating lowers the pull strength of the bond, enabling the customer to pry up a corner of the lid readily with a thumb nail and firmly but smoothly strip the cover off intact without the material curling or losing shape. Because of its plug construction, the lid is equally effective for use as a reclosure.

Both covers and bodies of the containers are made from roll stock. The body-forming machine is equipped with quick-change dies that emboss brand name, product designation, price and manufacturing code number. Both forming machines draw four impressions per stroke, two up across the web, and sever the web at this point for delivery to the filling station by means of chutes.

After being filled and sealed, the "ganged" containers are flipped over and transferred by a ram to an inclined belt conveyor and to a punch press that cuts the four completed containers apart. The packages are then check weighed before being finally packed in shipping containers.

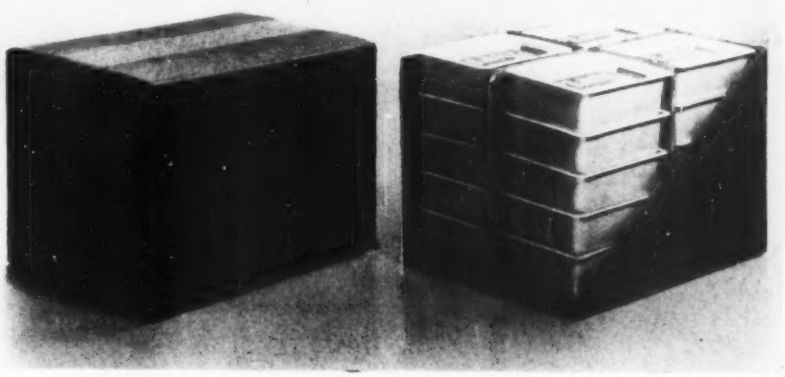
Individual containers are packed for shipping in groups of four, piled five high in a corrugated case. This shipper contains corrugated separators to prevent contact between flanges on the containers.

The packaging line has a capacity of 2,400 containers an hour, with the speed of output being governed primarily by the thermal-forming process and the sealing unit. Six operators are required to handle the entire packaging line.

The protective value of this package is high. It is said to double the normal packager-to-user life of the product, providing a shelf life of about two months. Although present cost of the new package is about four times that of a foil wrap, simplified distribution is reported to have produced important economies. Larger quantities can now be safely delivered to food stores, with fewer trips by distributors. And when full-scale packaging operations are initiated, according to the company, package cost itself is expected to drop by 25%.

SUPPLIES AND SERVICES: PVC film by Folienfabrik Forchheim, Forchheim, Germany. Roll stock for lids printed by Schupbach & Co. A. G., Burgdorf, Switzerland.

Protective shipper *for 20 plastic packages utilizes internal dividers to prevent contact between flanges of the nested containers.*



STATUS REPORT:

Monsanto plastics for packaging & the food additives amendment

As part of Monsanto's continuing responsibility to customers and to package users, we present this up-to-the-minute status report of Monsanto plastics for food packaging and a brief definition of terms important to a general understanding of the Food Additives Amendment, which became effective March 6, 1960 ■ Monsanto's extensive research and development over the years have resulted in many plastic formulations from ingredients which are generally recognized as safe or which have prior sanction or which have no reasonable expectation of migration ■ By using the Monsanto plastics listed on the following page, you can be certain of packaging materials which comply with the Food Additives Amendment. We will keep you informed of additions.

MONSANTO DEVELOPER IN **PLASTICS**

The Status of Monsanto Plastics—September, 1960

PRODUCTS	BASIS FOR RECOMMENDED USE IN FOOD PACKAGING
LUSTREX® STYRENE PLASTIC	
General Purpose Molding Grades	
Hi-Flow 55 Hi-Flow 66 Hi-Flow 77	Generally recognized as safe and prior sanction.
Impact Molding and Extrusion Grades	
Hi-Test 42 Hi-Test 48 Hi-Test 88 Hi-Test 180	Extension granted by FDA until March 5, 1961 (Long term feeding studies highly favorable)
MONSANTO POLYETHYLENE (NATURAL)	
Injection and Blow Molding Grades: 51, 52, 60, 80, 705, 805, 935, 9752	Prior sanction for non-fatty foods.
Film Extrusion Grades: 30, 31, 32, 33, 34, 37, 38, 706, 10406, 13406, 18300, 19706, 23406, 25706, 26706	Extension granted by FDA until March 5, 1961. (FDA is expected to acknowledge the safety of Polyethylene in contact with fatty foods prior to this date.)
Extrusion Coating Grades: 406, 537, 73	
VUEPAK® F CELLULOSE ACETATE	Generally recognized as safe and prior sanction.
OPALON® RESINS	
300 330 FM 300 FM	Prior sanction.
Polyvinyl chloride acetate copolymers	
506 510	Prior sanction.

DEFINITIONS

of terms important in understanding the Food Additives Amendment.

Food Additives Amendment—1958 Amendment to the 1938 Federal Food, Drug and Cosmetic Act. It requires, for the first time, that any chemical compound in food, whether intentional or incidental, must be proved safe before the food is put into interstate commerce. The amendment became effective March 6, 1960.

Food Additives—All chemical compounds in food are *not*, however, in *legal* sense food additives. Compounds with prior sanction or which are generally recognized as safe are specifically excluded by the new statute from the category of food additives.

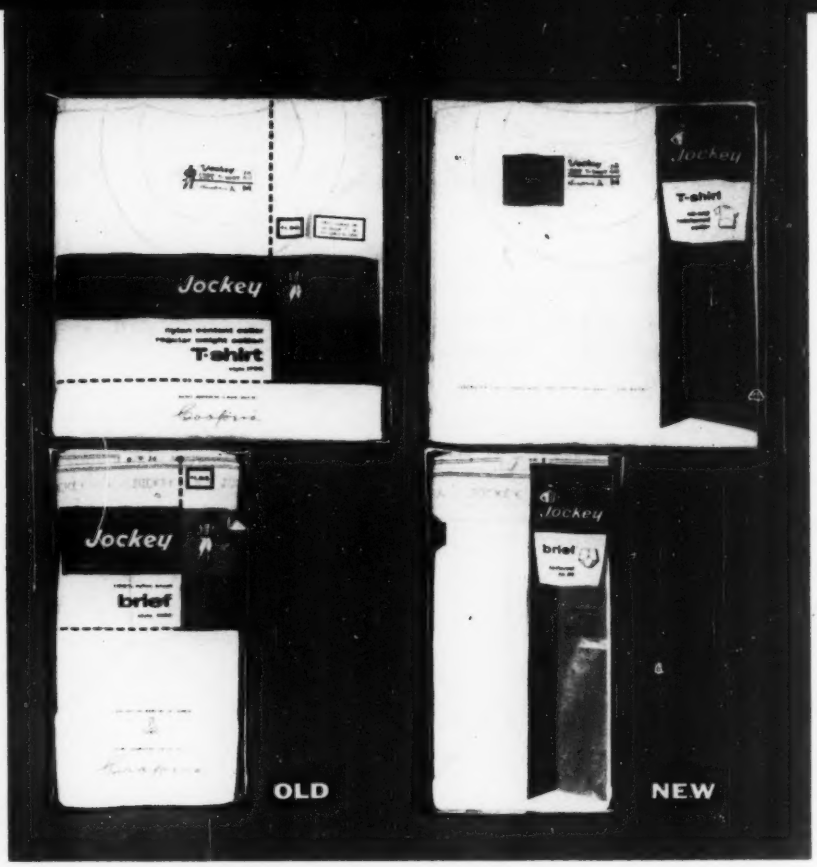
Prior Sanction—Before the 9/6/58 enactment of the Food Additives Amendment, the Food and Drug Administration and divisions of the United States Department of Agriculture had only limited authority to approve use of chemical compounds in foods. Favorable response to a request for approval normally meant an informal letter of no objection—now classified as a prior sanction—exempt under the new amendment.

Generally Recognized as Safe—The FDA interprets this to mean that it is the widely held opinion of acknowledged authorities that a given chemical compound is safe in human food. FDA has published in the Federal Register, lists of compounds which are considered generally recognized as safe.

No Reasonable Expectation of Migration—It is obvious that chemical compounds not in food cannot be food additives. But the definition of "zero" content requires scientific judgment. No reasonable expectation of migration (of pharmacological significance) realistically recognizes that infinitesimally small amounts of certain chemical compounds may be and generally are present in processed foods without hazard.

* * *

A special report on food packaging colorants has been prepared for package manufacturers using colorants in their packages. For this report, write to Monsanto Chemical Company, Plastics Division, Room 773, Springfield 2, Massachusetts.



Unitized design *on brown-and-coral vertical panel of new package (right) eliminates previous clutter. Actually, new design carries more informative copy as required by textile-labeling act. Extra labels had to be affixed to old package. Clear areas of new package give shopper better view of contents. Brief package is precisely half the size of T-shirt package, for more efficient use of retailers' display fixture space.*

The new Cooper's

Faced with the new textile-labeling law, the underwear firm boldly discards a successful five-year-old design, adopts colorful packaging for its Jockey men's-furnishings line

Cooper's, Inc., manufacturer of Jockey brand men's furnishings, is about to introduce new packages for its entire line that recognize two marketing facts of life important to many packagers, particularly those in the textiles field.

For one, this Kenosha, Wis., company (1,550 employees) realizes that even the best graphic design can quickly become obsolete in today's volatile marketing climate. So for the second time in five years* it has undertaken a complete package redesign program, a project many packagers contemplate from time to time, but often hesitate to execute.

For another, as a textile manufacturer, Cooper's was faced with requirements of the new Textile Fibers Products Identification Act, effective last March 3. At first, the company added pressure-sensitive labels with the fibre-content data and manufacturer-identification details required by the law. However, no matter how judiciously these labels were placed, they conflicted with the carefully planned elements of the old design. So Cooper's decided to revise its package designs completely rather than try to fit the law's provisions into an existing pattern. This may well set a significant precedent for other textile manufacturers and should be of interest to packagers of other products as the Congress and state legislatures continue to enact stiffer labeling laws in many fields.

As a result of these two considerations, Jockey

*See "Cooper's Coordinates," MODERN PACKAGING, Aug., 1955, p. 108.

merchandise will soon appear in stores looking very much 1960. The package design changes include:

1. A new trademark. A former realistic, full-length Jockey figure is gone. Instead, Cooper's is using a bold outline drawing, done in stylized technique, for more flexibility and impact.

2. A color scheme of rich chocolate brown and vivid coral plus gold accents on some of the packages. The new colors replace Cooper's long-time red and black, a combination which has been adopted by many of its competitors.

3. Virtual elimination of the Cooper's name. The brand name "Jockey" is the only one which appears on the face of the package.

4. Simplified design elements. This has been accomplished by unitizing the various design elements instead of treating them individually.

5. More product visibility. By concentrating the package design in a vertical panel, a larger portion of the garment is exposed to view. This holds true for both polyethylene bags (for underwear) and paperboard folders (for hosiery).

6. Pre-pricing. All items now carry a manufacturer-set selling price, although knit underwear is the only line actually fair traded. The company believes pre-pricing strengthens the quality concept.

7. More copy, less clutter. Cooper's new design incorporates all information required by the new Federal labeling law, but in a way that is orderly and harmonious with the whole.

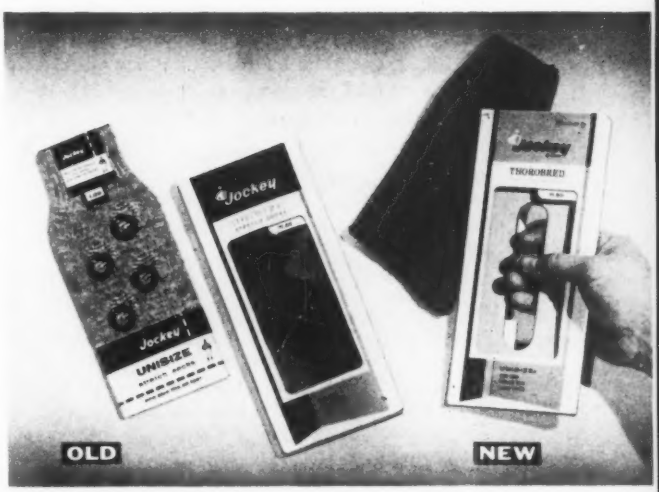
When introduced, Cooper's 1955 coordinated packaging program was considered an example of good design and advanced package planning. That graphic design, the company feels, still rates well even by 1960 standards. But Cooper's marketing objectives have changed enough in five years to dictate some sweeping packaging revisions. Rather than embark on a haphazard program of a change here and there, says Merchandising Manager William Vos, Cooper's packaging committee decided to "assume everything we were doing was no good" and to start from scratch.

Actually, of course, much that Cooper's had been doing was very good and is being retained. The distinctive "Jockey" logotype, for instance; also the taut polyethylene wrap for underwear uppers and lowers which allows the packages to be displayed neatly and effectively on Jockey display fixtures in department and men's stores.

But Cooper's new graphic design is more flexible and allows individual product and package variations within a common framework. The former Jockey symbol showed a full-length figure drawn with photographic realism. The updated symbol, which will be used most often as a half figure, merely suggests a jockey by sketching a two-toned shirt and typical cap. However, the arm is shown on hip in the same stance as the former full-length figure so that a tie-in between old and new should be apparent to consumers. Use of the half figure permits larger detail and gives greater impact within the same amount of space.

For underwear, the necessary informative copy required by the new textile-labeling law appears in brown type on the coral portion of the vertical ribbon. It is easy to read, but does not detract from the effective simplicity of the graphic design. Product name and a product sketch are placed in a free-form white block just below the Jockey trademark for quick identity whether the products are displayed vertically or in stacks. A single line of selling copy is printed in coral across the bottom of the package. Attention is called to a special feature of the T-shirt neck band with a small printed area in the proper spot on the shirt. But fully two-thirds of the package face is unprinted, allowing the merchandise to do most of its own selling. Design layout on back of the package is the same as the face except that the brown and coral vertical ribbon lists product features and legal data.

Woven and knit shorts are packaged almost identically to the underwear uppers. Woven (boxer type) shorts are in the same size of package as the uppers. Woven shorts were formerly in a "flip-top" type of polyethylene package which allowed one end of the package to be opened and tucked back in, to let customers feel the fabric. However,



New die-cut folders *hold stretch socks in shape, yet allow customer to feel texture. Oval cut-out in inner board permits examination without board interference. Graphic design is planned to complement all sock patterns. Formerly socks were boarded and sleeved, as shown at left.*

Packaging striptease *is new order for Jockey sportswear. Former polyethylene bag (left) has been dropped. Sportswear now carries high-quality hang tag only. Cooper's reasoning: No one package could handle successfully 300-odd items in sportswear line. Printed film distorted some colors and patterns. Company says seasonal merchandise moves fast enough to keep soilage problem in check without protective packaging. But polyethylene is retained for all the staple items.*

Cooper's is convinced that today's customers no longer have the compulsion to feel fabric. They are more concerned with the "wash-and-wear" label. So Cooper's will seal its woven-shorts packages from now on, saving a small amount of film and giving a neater package appearance.

Knit briefs are packaged so that they are exactly half the size of the uppers and woven-shorts packages. These modules facilitate display.

Cooper's new design adapts readily to hosiery. The company has eliminated the boarding of stretch socks, since this type of packaging is thought to have been cheapened by its wide use for low-priced goods. Stretch socks are now in paperboard folders die cut to show the socks front and back. The package still contains a lightweight board inside to support the socks, but it is ingeniously cut out in the center so the customer feels only fabric. Testing the fabric is still an automatic consumer reaction when buying socks, Cooper's reports, although it does not appear to be with underwear. The folder carries the brand name and new Jockey symbol at the top. The brown and coral ribbon divides on either side of the cut-out portion on the folder and joins again at the bottom. As before, sized socks carry only a gummed rider ticket at the sock cuff.

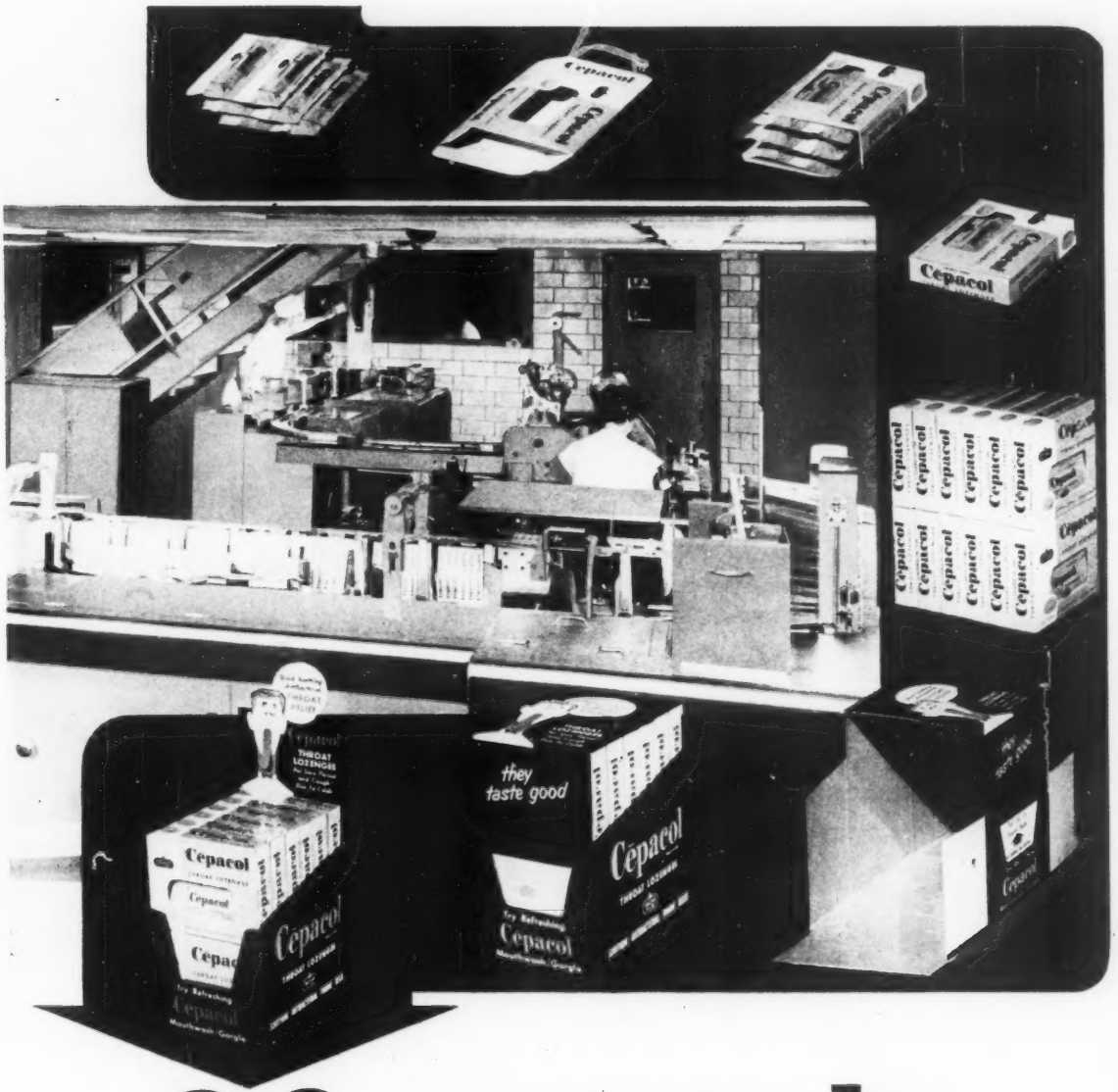
Concurrent with introduction of the new packaging, Cooper's is making a significant *de*-packaging change. Most sportswear is being taken out of open-end polyethylene bags and will now be supplied with hang tags only. Cooper's admits it is bucking a well-established industry practice with this decision, but believes its reasons are valid.

The company was, reportedly, the first in the men's-wear field to package its entire sportswear line in polyethylene. Nearly all other manufacturers followed suit. Most of Cooper's 10,000 dealers liked the decrease in markdowns provided by polyethylene-protected goods, but most believed the printed film detracted from the luxury appeal of the garments. The package had been designed for vertical display – in theory the most practical and logical way. But in practice Cooper's found that stores did not actually show them like this. Vertical display was not compatible with high-fashion connotations aimed at for sportswear. And Cooper's never satisfactorily solved the problems involved in putting helpful customer information on 300 different styles and patterns. The company had to use dozens of different labels to individualize the sportswear packages. So packaging for fashion sportswear is being dropped. Soilage is believed to be less of a problem with fashion goods than with staple items, since sportswear is mostly seasonal and moves in and out quickly. Knitted golf shirts, on the other hand, are carried the year round and will continue to be packaged in printed polyethylene. The rest of the sportswear line will carry only a high-styled string tag to give product information and price.

Cooper's chose its new package design with a number of marketing factors in mind. For one thing, the new design is expected to wage a strong counter-attack against the sales-inhibiting sameness of many competing packages. Cooper's red and black color scheme was alone in its field in 1955. But by this year, nearly half the packages of Jockey brand underwear's major competitors are said to be in red-and-black-printed polyethylene. Cooper's believes that the brown and coral color scheme of its new Jockey package is eye catching, masculine in feeling, yet appealing to women and, most important, strikingly different from competitors.

Another aspect is the strengthening of the Jockey brand name. In 1955 Cooper's was marketing some items under the Jockey label, others under "Cooper's." Today all products are sold under the Jockey name. Cooper's is [*Continued on page 220*]

SUPPLIES AND SERVICES: Bags of 1½-mil polyethylene printed in three colors by Dow Chemical's Dobeckmun Co., 3301 Monroe Ave., Cleveland 13. Paperboard hosiery folders by Lassiter Corp., 350 Fifth Ave., New York 1. Graphic design by Dave Chapman, Inc., Industrial Design, 420 N. Michigan Ave., Chicago 11.



6.6 seconds

from pouch to display carton on Jones integrated CMC-NMC line!

High speed Jones cartoning and overpack line at The Wm. S. Merrell Company, Cincinnati, has increased production 65% while reducing labor costs 40%!

Overpack display cartons (containing 12 unit cartons) are now coming off the Jones CMC (constant motion) and NMC (nova motion) cartoning line at the rate of one every 6.6 seconds, or 9 per minute. Present production of 3,300 Cepacol display cartons in an 8-hour shift compares with the previous 2,000 in 16 hours!

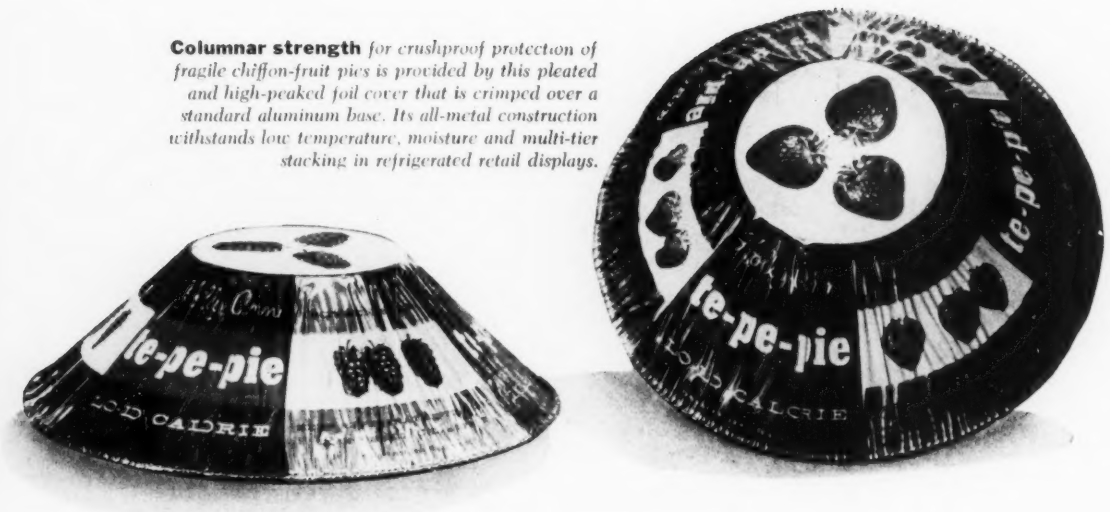
This dramatic increase in efficiency was also accompanied by significant savings in board resulting from a change in construction of the overpack display carton.

The Jones integrated CMC-NMC line is capable of considerably higher speeds than mentioned above, and is well suited to cartoning fragile or odd-shaped parts and amorphous pouches and bags. Especially radio-tv tubes, spark plugs, electrical fixtures, tissues, cake mixes and similar products that are usually hand-loaded into conveyor buckets. Complete information is contained in new 16-page brochure, "Cartoning and Case Packing Ideas." Write today for your free copy. R. A. Jones & Company, Inc., P.O. Box 485, Cincinnati 1, Ohio.

R. A. & COMPANY, INC.

Branch Offices. *New York, Chicago, Atlanta, St. Louis, Los Angeles, San Francisco, Seattle, Dallas, Mexico, Montreal.*

Columnar strength *for crushproof protection of fragile chiffon-fruit pies is provided by this pleated and high-peaked foil cover that is crimped over a standard aluminum base. Its all-metal construction withstands low temperature, moisture and multi-tier stacking in refrigerated retail displays.*



Cone top for pies

Stacking strength and resistance to moisture are coupled with colorful display in a new aluminum-foil package for refrigerated products

Better protective packaging for fragile chiffon-type pies—which also permit stacking in refrigerated store displays—has been effected with the adoption of an aluminum pan with a conical, flat-topped lid by the Rich Pie Co., San Francisco, (35 employees, $1,500,000 gross), which packages and distributes fruit-filled pies under the trade name "Holly-Ann Te-Pe Lo-Lo Calorie."

Not only does the new dome-shaped package withstand the rigors of moisture and low temperature better than slightly lower-cost waxed or window cartons, according to Rich, but it also provides striking and unusual display. Both the unusual shape and the use of bright colors to identify three different types of fruit ingredients have measurably improved sales, according to officials of the bakery. A pattern of gold and white panels is employed on all of the hooded pans, with colorful reproductions of the fruit filling on alternate panels of the package: green for apple pies, red for a strawberry and cerise indicating a boysenberry-filled pie.

The protection for these delicate creations of crumb crust and fluffed egg white starts with a rigid 0.004-in. aluminum-foil base with a diameter of 9 inches. The cover, also of 0.004-in. foil, is constructed with a $2^{3}/_{8}$-in., truncated dome. Pleats, added to the sloping sides during the forming process, increase the cover's columnar strength, enabling filled containers to be stacked without crushing.

The cover is crimped over the base pan at the bakery with a semi-automatic foot-operated lidding machine modified to accommodate the unusual height of this cover. Pies are stacked two up, six to a box, in a corrugated shipper.

So successful have been the functional and merchandising attributes of this new package that Rich plans to widen distribution of the refrigerated pies and also freeze its products in the aluminum container for added marketing via retailers' low-temperature refrigeration cabinets.

SUPPLIES AND SERVICES: Foil pan and cover by Kaiser Aluminum & Chemical Corp., Oakland 12, Calif.

"Knox delivery, consistent quality, sells us," says plant manager of major soft drink firm

"Knox's delivery service is an important reason behind our choice of Knox glass for many of the bottles we use," says the plant manager of a large Southern bottling plant.*

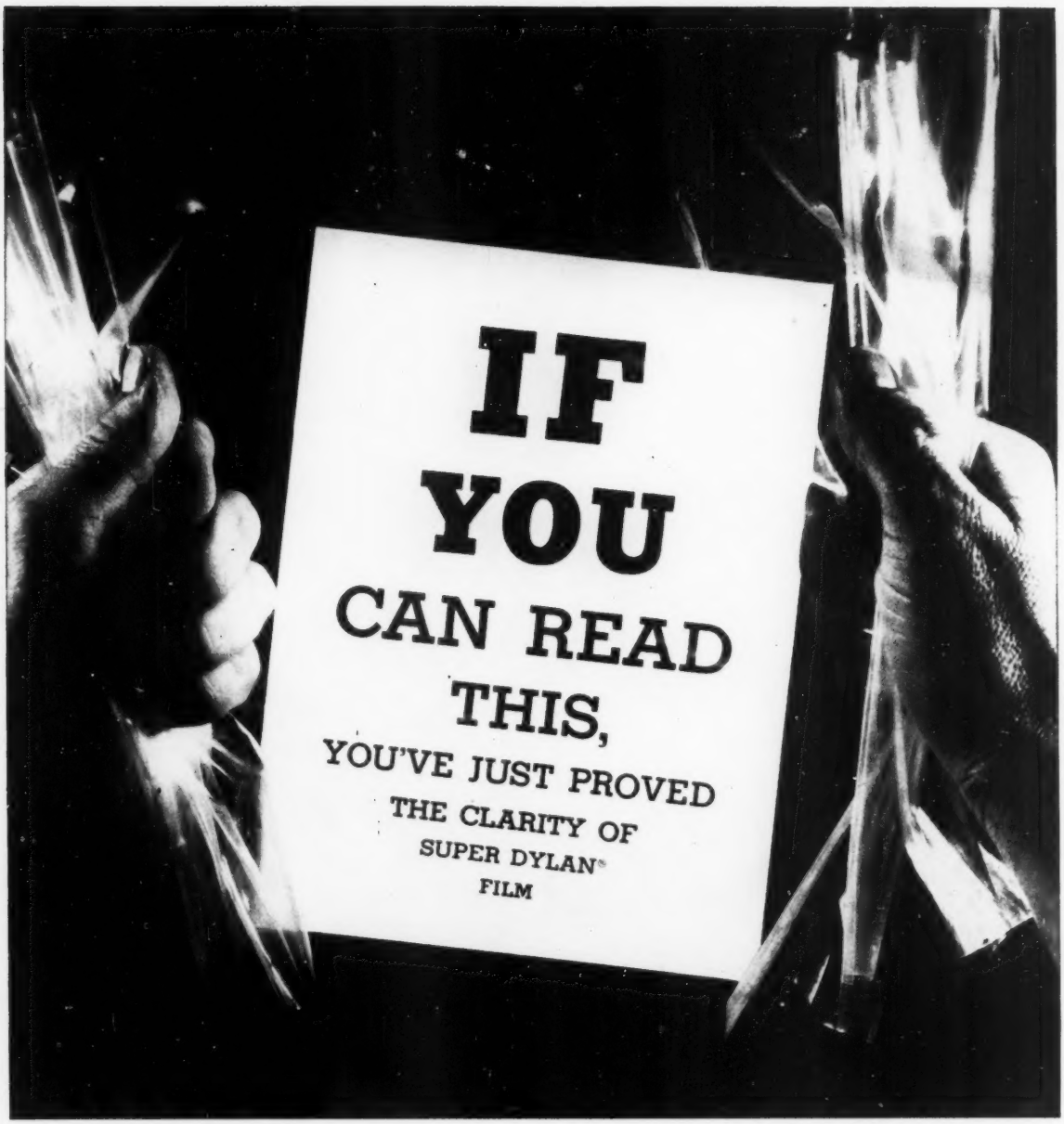
"Low breakage is also an important factor in selecting our bottle suppliers," he says. "Breakage averages only about 40 bottles out of the many thousands we fill on an average day. In addition, our bottles make about 25 return trips to the plant before they are chipped, broken, or lost.

"We very seldom run into any glass which chips or breaks without explanation during the normal filling operation. The consistent quality of the Knox product is particularly pleasing to our company, and Knox works very closely with our officials to make sure we're getting exactly the glass we require."

See how Knox can meet your needs—with outstanding quality, delivery, and service. Contact Knox Glass, Inc., Knox, Pennsylvania, or any one of 37 conveniently located sales offices.

*Name available on request

the new / **KNOX GLASS**



SUPER-DYLAN® film gives your products added sales appeal!

Compare it to other films . . . you'll see that it has outstanding clarity and gloss. If you use the older type of clear, crisp wrapping, compare its cost to film made from SUPER DYLAN polyethylene. You'll find that SUPER DYLAN film can save you up to $179.00 for each 1000 pounds of wrapping you now use. A year ago, this saving was $129.00 . . . a $50.00 savings increase in just one year! If your product is moist, this film keeps the moisture and freshness locked inside. If your product is dry, SUPER DYLAN keeps it that way! SUPER DYLAN film can be heat-sealed, has superb printability, and tears in a straight line *without* tear tape. This film is dimensionally stable and is unaffected by freezer temperatures and high or low humidity. It has just the right stiffness for use in high-speed packaging machines. For more information on SUPER DYLAN and the name of nearest film producer, write to Koppers Company, Inc., Plastics Division, Dept. MPG-90, Pittsburgh 19, Pa.

KOPPERS PLASTICS

Technical & Engineering

Charles A Southwick, Jr., *Technical Editor* Robert J. Kelsey, *Engineering Editor*

Improved single-structure carton

'Calking' edges with pliable adhesive, combined with special seal-end construction, is found to give product protection at all points equivalent to the carton material used.

By R. J. Hickin and J. J. Higgins†*

The advantages of single-structure carton packaging have been recognized for many years (1-6)[‡]. Obtaining a practical and widely applicable single-structure carton with the necessary protective features to eliminate inner liners and outer wraps has, however, proved to be a difficult problem.

Basically, the advantages of single-structure carton packaging are as follows:

1. Possible reduction in packaging-material cost.
2. Higher filling-line speeds, in the 300-packages-per-minute range. (Generally, the maximum speed when a folding carton with inner pouch or an overwrap is used is in the 100-packages-per-minute range.)
3. Reduction of material-handling costs in the packaging plant (single structure—only one item to purchase, warehouse and handle).
4. Improved consumer convenience—primarily faster product accessibility.

In the past, almost all attempts at a single-structure package have been made solely by the carton-construction route. This research has been based on the premise that a single-structure carton, if perfectly made and sealed, will be siftproof, infestationproof and perhaps airtight to a degree.

Perfection, especially at the speeds which make a single-structure carton advantageous, has been impossible to attain because of:

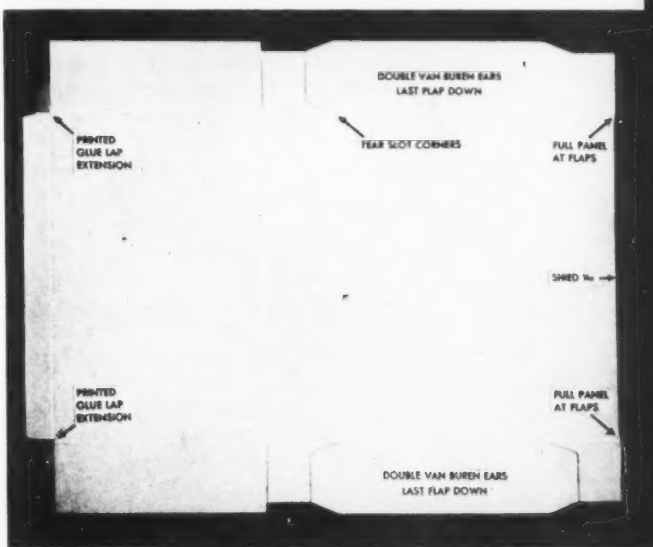
1. Normal fabricating variations. A glue seam even slightly off square will form corner holes.
2. Imperfect closing of flaps and/or cartons sealed slightly out of square.
3. Damaged corners—a problem even if the carton is perfectly made and perfectly closed.

Obviously these problems are difficult to overcome. Hence, to have a successful single-structure carton, it is necessary that the package be siftproof and infestationproof, with the above-listed imper-

*Manager of Product Development, Folding Carton Div., and †Manager of Research & Development, Ohio Boxboard Div., Packaging Corp. of America, Rittman, Ohio.

‡Numbers in parentheses identify References appended.

Figure 1. *Special construction features of carton designed for Calk-Seal sealing include special panel dimensioning, double Van Buren ears, tear-slot corners and printed glue-flap extension.*



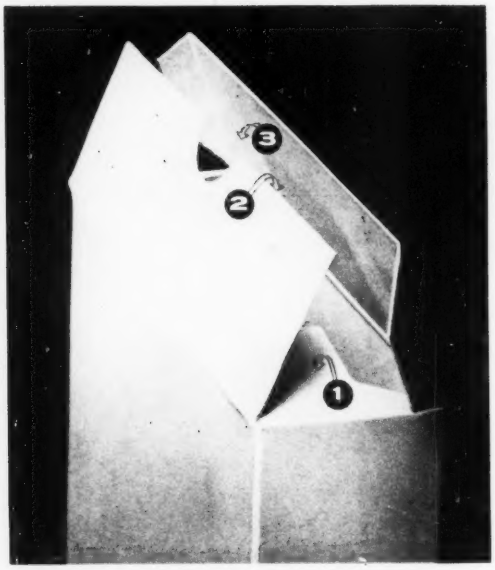


Figure 2. *Double Van Buren ears extend from the outside of last-folded flaps. Flap-folding sequence is indicated on illustration.*

fections still present, and in some cases a successful single-structure carton must resist water vapor.

The previously unsolved problems all centered around the sealed areas of the carton. Therefore, our renewed research, beginning four years ago, had this objective: Taking into consideration the imperfections of carton fabrication and packaging, to find a method of providing protection to the sealed areas of the carton which would be equal to or superior to that of the paperboard used, with its built-in barrier qualities.

The reaching of our objective, the single-structure carton, incorporated the following special carton-construction features (see Figure 1):

1. *Double Van Buren ears*—which extend from the outside or last-folded flaps. In the past, the ears have extended from the inside or first-folded flaps (see Figure 2). The ears serve two purposes:
   (a) To assist in obtaining as square a carton as possible during forming and gluing.
   (b) To provide protection to the four corners of the carton. (This construction has been used for many years on soap cartons, primarily as an anti-sifting device.)

2. *Tear-slot corners.* The slit knives for cutting flaps are held back a predetermined distance from the main-panel scores. When the carton is formed, this device results in an unnoticeable webbing effect at the corners of the carton.

3. *Full panel at flaps.* The full-width dimension is used on both the top and bottom flaps on the fourth panel. This provides tight corners for protection against sifting and infestation. The fourth panel itself is shied 1/32 in. for better appearance.

4. *Printed glue-lap extension.* Controlled adhesion of the glue lap is obtained by printing the glue-lap extension. This allows the extension to ride free of the flap when the carton is formed. Because of this, the side-panel scores fold evenly, providing a carton more nearly square.

Hence, our final carton construction can be described as a seal-end carton with special panel dimensioning, double Van Buren ears, tear-slot corners and printed glue-lap extension. This is the best in carton construction which we have been able to devise—but it is still not a functional single-structure package in that the corners of the carton still do not provide the protection that the paperboard with its barrier characteristics provides to the other areas of the package.

To this carton construction we have added Calk-Seal* (6), which is a pliable adhesive that literally "calks" the four edges of the carton, eliminating the imperfections in carton fabrication and usage (see Figure 3). Our most generally used Calk-Seal compound is composed of microcrystalline wax, polyethylene and butyl rubber. It is impervious to moisture and crawling insects, and hence affords protection equal to that provided by the paperboard with its barrier characteristics. Being pliable, its stretching qualities allow it to expand or contract with any jarring of the corners.

Calk-Seal cartons can be produced on a small unit which can be attached to existing seal-end packaging equipment, or it may use special high-speed packaging equipment. It is applied at a temperature of 220 deg. F. Note that Calk-Seal is not used also to affix the Van Buren ears adhesively to the sides of the cartons, since it is pliable by function. Standard adhesive is used for this purpose.

Test results

Extensive tests were run comparing the single-structure Calk-Seal carton with the types of cartons it was designed to replace, namely, the shell with overwrap and the shell with an inner pouch, both

*Patent applied for by Packaging Corp. of America.

Table I: Carton moisture pick-up

Carton style	Actual gain	Theoretical gain*	Gain through seals
Calk-Seal	7.1 gms.	5.5 gms.	1.6 gms.
Regular seal end	9.6 gms.	5.5 gms.	4.1 gms.

*Based on 87 sq. in. of surface and a WVTR of 0.3 for the board.

of which may offer some water-vapor protection.

The original tests showed that cartons which proved to be satisfactorily siftproof were not necessarily infestationproof. On the other hand, cartons which proved to be impervious to crawling insects (infestationproof) were also siftproof. Further and expanded testing was channeled, therefore, into two basic areas: (1) infestation and (2) water-vapor transmission.

Infestation. The types of packages tested were:

1. Shell and tight wrap, machine sealed.
2. Calk-Seal style carton, machine sealed, without the calk application.
3. Calk-Seal style carton, machine sealed, with the calk application.
4. Calk-Seal style carton, hand sealed, with the calk application.

Three products were used for the test:

1. Non-fat powdered milk.
2. Dog meal.
3. Corn meal.

Insects used were healthy adults of the crawling variety (tribolium and saw-tooth grain beetle). The contents of each package were screened and samples were examined under a microscope, after which all packages were fumigated so that insects in any form (adult, larvae or eggs) would be dead at the time cartons were filled.

The cartons were then isolated by product in fibre drums containing a moisture supply and approximately 300 healthy adult insects. The life cycle of the insects used was approximately 30 days. The shelf life simulated in this test would exceed all reasonable commercial situations.

Results obtained were as follows:

1. Shell and overwrap, machine sealed: Approximately 25% of the packages were infested; 8% of the packages contained larvae, which indicates insect penetration early in the test.

2. Single-structure style carton, machine sealed, without calk application: Approximately 65% of the packages were severely infested. In one package, for example, there were at least 2,000 adult insects. (The results here substantiated our earlier conclusions that carton construction alone does not provide an adequate single-structure package.)

3. Calk-Seal style carton, machine sealed, with calk application: Only one of the packages contained a single insect on the 106th day of the test. No larvae were found.

4. Calk-Seal style carton, hand sealed, with calk application: No insects were found during any phase of the test. (The use of this fourth category, as compared with the third category, was to demonstrate the lesser degree of infestation protection attained with high-speed machine gluing. The results proved, however, that the Calk-Seal application was good enough so that the actual difference between them was negligible).

From this test the conclusion was reached that the Calk-Seal application and special carton construction are superior in infestation resistance to a tight-wrapped carton and are also superior to cartons with uncalked seal ends.

Water-vapor transmission testing. In view of the success of the infestation tests, the next program was to determine if the excellent seal combined with a barrier-type board would offer the protection required by many items now contained in double-structure cartons. The first step was to select a

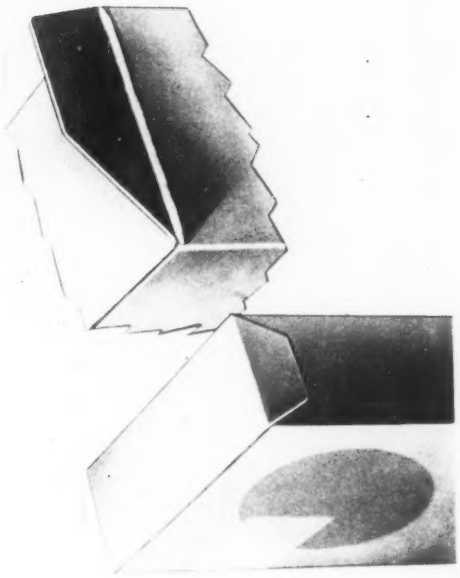
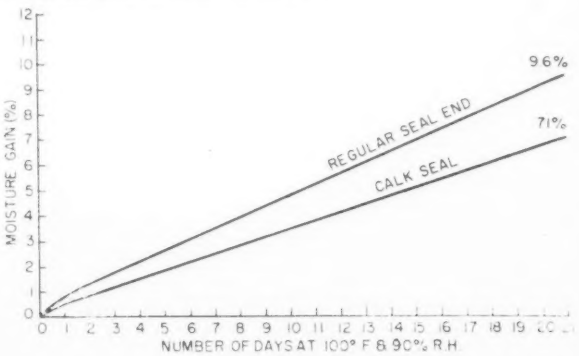


Figure 3. *Placement of Calk-Seal compound is shown in section of box at upper left.*

Figure 4. *Curve showing reduction of moisture gain with Calk-Seal method as against regular seal-end carton using same carton material.*



barrier board which was known to have excellent water-vapor resistance and then compare the Calk-Seal carton with a regular seal-end carton.

Regular Van Buren-end cartons were not included in the testing since the effect of the Calk-Seal application is not to improve on the functionability as much as it is to assure the packer that 99%-plus of the cartons have been sealed satisfactorily.

As a barrier material, a laminated sheet was selected which permitted excellent sealing, would not break down at the scores and had a water-vapor transmission rate of 0.3 gm./100 sq. in./24 hrs. at 100 deg. F. and 90% R.H.

This type of cartonboard is manufactured by wax laminating 47# laminated glassine (20-7-20) to a white patent-coated newsboard. The first series of tests was conducted by preparing four packages 4⅜ by 1½ by 6¼ in. of each style and filling them with 100 gm. of calcium chloride. These cartons were then weighed and placed in a humidity cabinet which is maintained at 100 deg. F., 90% R.H. The cabinet is checked for constant humidity by determining the water-vapor-transmission rate of a Pliofilm standard film daily. Each of the test cartons was weighed daily and the average moisture gain was plotted against storage time.

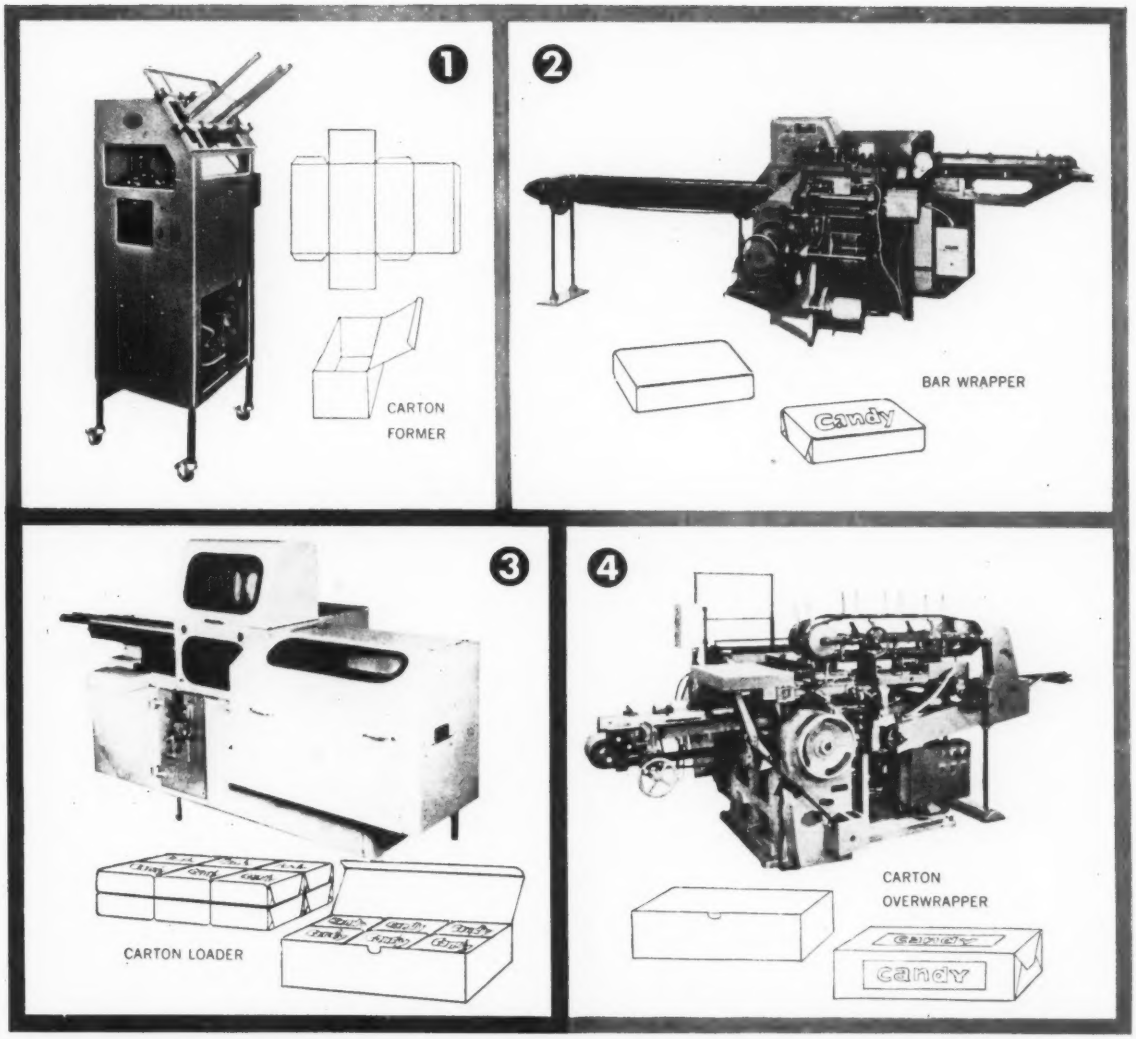
It was found, as shown in Figure 4, that the Calk-Seal carton is superior to a regular seal-end carton in resistance to WVT. It has a water-vapor-permeability rate of 0.30 gm./day compared to 0.42 gm./day for the regular seal-end carton. It should be remembered that the seal-end cartons were sealed in the laboratory and this seal should be better than the average coming off a filling line.

A theoretical value for the weight gain of the carton, based on the water-vapor-transmission rate of the material and the surface area, was also calculated. The difference between this value and the actual value obtained in the packaging test gives us a measure of the effi- [*Continued on page 220*]

Table II: Summary of packaging tests—water-vapor transmission

Product	*Package style*	*Material of construction*	*% moisture pick-up (after 21 days at 100 deg. F., 90% R.H.)*	*Condition of product*
A Cake mix Type I	Calk-Seal	White patent-coated newsback wax laminated to 47-lb. laminated glassine	3.7	Excellent
	Inner bag*	White patent-coated news carton with 47-lb. glassine bag	5.5	Satisfactory
	Reg. seal end	White patent-coated newsback wax laminated to 47-lb. laminated glassine	4.7	Satisfactory
B Cake mix Type II	Calk-Seal	White patent-coated newsback wax laminated to 47-lb. laminated glassine	2.0	Excellent
	Inner bag + overwrap*	Bending-chip carton with inner polyethylene bag and foil-paper overwrap	0.5	Excellent
C Instant potatoes	Calk-Seal*	White patent-coated newsback wax laminated to 47-lb. laminated glassine	3.9	Excellent
	Pouch in a box*	Clay-coated bleached kraft with polyethylene-foil-paper pouch	2.1	Excellent
D Powdered sugar	Calk-Seal	White patent-coated newsback wax laminated to 47-lb. laminated glassine	1.0	Excellent
	Inner bag*	White patent-coated carton with 40-lb. waxed glassine bag	1.6	Satisfactory
	Calk-Seal	White patent-coated newsback laminated to 30-lb. opaque greaseproof	6.3	Satisfactory
E Cereal	Calk-Seal	White patent-coated newsback wax laminated to 47-lb. laminated glassine	4.1	Satisfactory
	Inner bag*	White patent-coated carton with a 47-lb. laminated glassine inner bag	4.2	Satisfactory
	Calk-Seal	White patent-coated wax laminated to 30-lb. opaque greaseproof	6.3	Marginal
F Non-fat dry milk	Calk-Seal	Cylinder kraft wax laminated to 47-lb. wax-laminated glassine	1.1	Satisfactory
	Inner bag*	Cylinder kraft with 3-mil polyethylene bag	1.1	Satisfactory

*Now in commercial use.



FORGROVE 88 CARTON LOADER

Completes Integrated Packaging Line

The final step in completely automatic packaging is now available from Packaging Machinery. The Forgrove 88 Carton Loader readily ties in with many PACKAGE and Forgrove wrapping machines in addition to the ones shown. The 88 automatically loads candy bars, packs of cookies for vending machines, and other products in single or multirow formations. Will load at speeds up to 60 layers per minute into open topped trays or hinged-cover cartons. For full details on an integrated packaging line or for information on how to adapt the Forgrove 88 Carton Loader to your particular needs, call your nearest PACKAGE sales representative today.

1. The Tray-Lock is one of 3 PACKAGE carton forming machines to use inexpensive, die-cut blanks.
2. The DF-1 candy bar or biscuit wrapping machine is one of many in the PACKAGE line for wrapping small products.
3. PACKAGE carton forming and wrapping machines tie in easily to the new Forgrove 88 Carton Loader.
4. The FA, most widely used overwrapping machine in the PACKAGE line, wraps with wax or kraft paper, cellophane, polyethylene or reinforced foils.

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PACKAGE

Investigation of cushioning materials

Picatinny program involves the use of dynamic drop-test apparatus, allowing for free fall of simulated package, with electronic recording of results. By Mario E. Gigliotti*

A major problem in Ordnance Corps packaging is to afford adequate protection against shock and vibration to fragile equipment during transportation and delivery. In most instances, this is accomplished by the use of cushioning materials which minimize the shock transmitted to the item, so that the force experienced by the packaged part is reduced to the extent that it does not break, become malfunctional or – as in the case of some ammunition items – present a safety hazard.

Picatinny Arsenal's Plastics & Packaging Laboratory currently has under way a research and development program on the investigation of cushioning materials. This project has as its main objectives the evaluation of the performance of various cushioning materials and – by means of comprehensive physical tests – the determination of their properties and characteristics. Resultant data and information derived from the tests performed should enable the economical and efficient utilization of the respective cushioning materials to provide the required protection against the hazards of anticipated rough handling under shipping conditions.

Picatinny's program on cushioning materials is one of several similar projects. One such program was described by Stern (1, 2)[1] and it presented a method of selecting suitable package-cushioning materials for specific applications. It is to be noted, however, that the principal difference between the Picatinny approach to the question and that described by Stern is in the test equipment used. As indicated later in this article, the dynamic drop-test apparatus at the Picatinny Arsenal allows for the free fall of a complete, simulated package (exterior container, plus cushion and load) onto an impacting surface. This equipment, quite unlike the loading-pendulum-and-cushion-specimen type used at the Forest Products Laboratory, more nearly duplicates the "as-used" or rough-handling conditions that may be anticipated during shipment. Other differences between the Picatinny and FPL programs, though somewhat lesser, are in materials involved, electronic instrumentation for recording results, implementation of data gathered, derivation of curves from test results and selection of package-cushioning materials.

*Packaging Materials Technologist, formerly of the Packaging Section, Plastics & Packaging Laboratory, Picatinny Arsenal, Dover, N. J.; currently assigned as Packaging Specialist to the Dept. of Defense Plastics Technical Evaluation Center.

Materials and tests

The cushioning materials involved in Picatinny's program cover a wide range of compositions – from bonded fibres (e. g., animal hair bonded with latex) to flexible, semi-rigid and rigid elastomers

[1] Numbers in parentheses identify References appended.

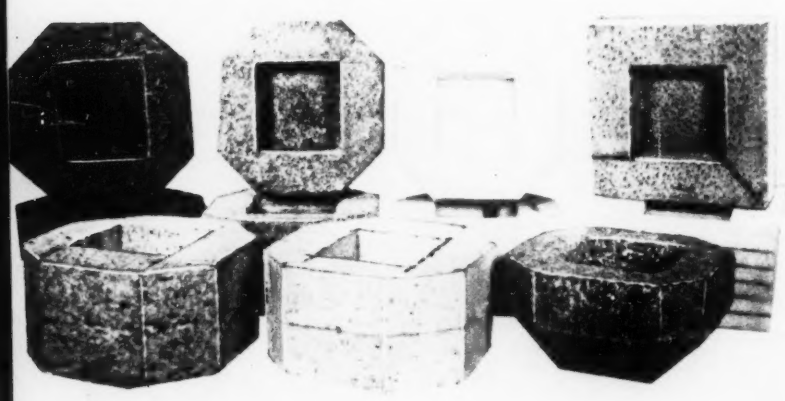


Figure 1. *Typical sample cushioning-material pads used in Picatinny program. Left to right (top row): die-cut rubberized hair; molded rubberized cocoanut fibre; die-cut and laminated expanded polystyrene; die-cut and laminated flexible polyurethane foam. Bottom row: two samples (at left) of chopped and molded flexible polyurethane scrap; molded rubberized hair. Laminated flexible polyethylene foam also is being tested.*

(e. g., polyurethane foams). Most cushioning materials are available in many different densities, shapes, thicknesses, etc., and can be in the form of molded, die-cut, or die-cut and laminated pads. Figure 1 shows several typical cushioning pads. The cavities in the pads are of such dimensions as to accept a test box simulating a packaged item (see also Figure 4).

Tests for determining the energy-absorbing characteristics of cushioning materials fall into two basic categories: (1) those involving static loading of the cushioning and (2) those in which the cushioning material is dynamically loaded.

Static loading

Early attempts at obtaining engineering data on cushioning materials for use in package-design work were generally limited to stress-strain curves derived from the static loading of test specimens. A typical static stress-strain curve, for a cellulosic cushion pad 3 in. thick, is shown in Figure 2. As shown in the graph, the stress in pounds is plotted against cushion deflection expressed as a percentage of the cushion's original thickness. Such data is secured by slowly applying a load (usually at a rate of 1 to 12 in. per minute) to the cushioning material and measuring its compression. Examination of the typical curve shows that a non-linear relationship exists between applied stress and resultant strain. Most cushioning materials used by packagers behave in this manner.

The illustrated plot also shows—at the higher loadings—that the deflection decreases rapidly with heavier loads and eventually becomes zero as the cushion reaches its point of ultimate compression. While the utility of such curves should not be discounted—particularly stress-strain data obtained at low temperatures, where many materials lose their resiliency—it has become apparent that slow rates of loading are not representative of conditions experienced by a cushion in actual use.

Dynamic testing

When a packaged cushioned item is dropped or otherwise roughly handled, it is subjected to rapid, sharp forces of short duration. With this consideration in mind, it is evident that the performance of cushioning materials under dynamic loading is far different from that under static loading. Picatinny's program is, therefore, concerned with measurements of such dynamic forces and the translation of the data so derived into a form readily usable by the package designer.

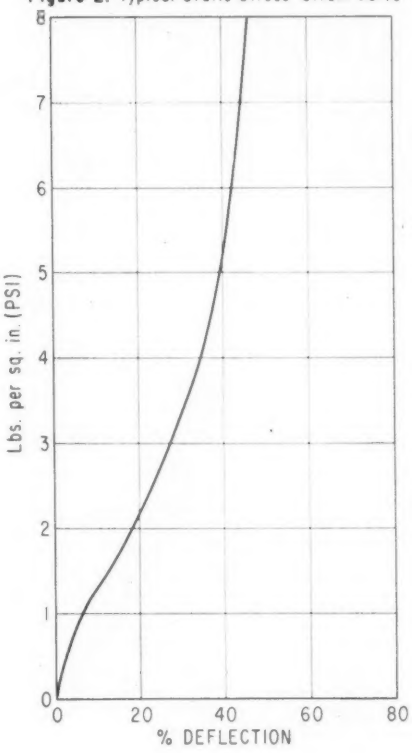
To determine theoretically the minimum cushioning requirements for a specific application, Stern tells us the packaging engineer must carefully consider the following three fundamental principles:

1. The fragility of the item to be protected. (One measure of fragility of an item is the maximum acceleration or deceleration—i.e., change in velocity—that the item can withstand without breaking, expressed in multiples of the constant acceleration of a freely falling body due to gravity. For example: An item having a "fragility factor" of 50G would be able to withstand without breakage up to 50 times the acceleration it would receive if it were allowed to fall freely in space.)

2. The severity of shock to which the container will be subjected during shipment. (Frequently the shock is expressed in terms of the maximum expected height of drop in inches.)

3. The energy-absorption characteristics of the cushioning material used to protect the item. (Formulae that relate these basic characteristics to each other have been developed to help facilitate the solution of cushioning problems.)

Figure 2. Typical Static Stress-Strain Curve



Equipment and procedure

Most methods for obtaining dynamic cushioning data consist of dropping a specified weight from a known height onto a test cushion of determined thickness, dimension and density. In turn, accelerometers attached to the dropped weight measure the shock it receives in terms of an accel-

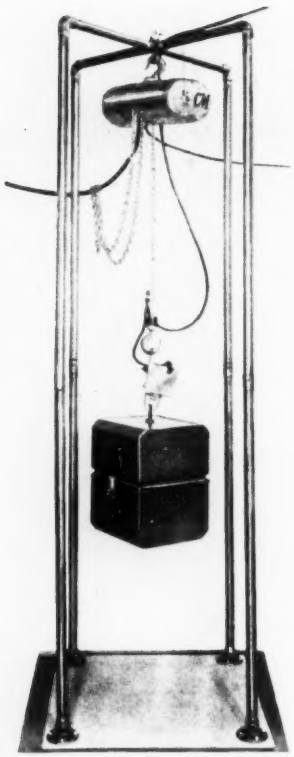


Figure 3. *Dynamic test fixture as used at Picatinny, showing drop-test frame, electric chain hoist, solenoid release mechanism, steel test container, steel dropping surface.*

eration-time trace, along with peak acceleration. The data which are thus obtained are then plotted into an appropriate curve.

The approach used by Picatinny's packaging engineers is somewhat different and, it is felt, more realistic. The Picatinny procedure differs from the usual in that a package, complete with cushioning, is simulated and this entire unit—exterior container, cushion and load—is dropped on an impacting surface. Consensus is that this method more nearly approximates actual use conditions.

Figure 3 is an over-all view of the dynamic drop-test apparatus[2] and shows the drop-test frame, electric chain hoist, solenoid release mechanism, steel test container and steel dropping surface. In conducting a test, the exterior test container (12 by 12 by 16 in.) can be raised to any desired height by the electric hoist and then released for free fall onto a steel plate by means of a solenoid-operated release mechanism.

As is shown in Figure 4, the exterior test container has within it a 6-by-6-by-10-in. interior test box. This simulated packaged part, or load, is fitted into two matching die-cut and laminated or molded cushioning pads which thus position the test box. The weight of the simulated load can be varied by the addition or removal of lead shot in the test box. As pictured, two accelerometers[3] are affixed—one on each of two opposing sides—to the interior test box. These accelerometers are instrumented to a direct-reading recording oscillograph[4] which, in turn, records an acceleration-time trace on light-sensitized paper. (Alternatively, the accelerometers can be instrumented to an oscilloscope and the acceleration-time sweep photographed by a Polaroid-Land camera.)

In the performance of a dynamic drop test, the accelerometers mounted on the interior test box measure the shock transmitted to it, through the exterior container and as mitigated by the cushioning material, when the assembly strikes the steel plate. The electrical impulse caused by the impact is fed to the Visicorder which, in turn, transmits onto sensitized paper light paths in the form of acceleration-time traces. Typical acceleration-time curves, traced by light paths on sensitized paper, are shown in Figure 5. The vertical displacement thus recorded represents the shock, in G's, transmitted to the interior test box simulating the packaged item. The horizontal axis is a time base, in milliseconds. (In the trace depicted, the recording paper was run through the Visicorder machine at a rate of 25 in. per second).

Mathematical theory

All this data having been gathered, how are they put into usable form for the design engineer? To do so, several physical laws must be considered and the mathematical relationship of the factors involved in a drop test should be resolved.

First, these assumptions are made: The outer container and the impacting surface are rigid; the cushion pad is of negligible mass and its compression characteristics are independent of its dimensions; the packaged item (interior test box) is rigid and of uniform density; the container, when t is dropped, strikes the impacting surface squarely; the packaged item (interior test box) does not rotate while it is being cushioned.

Furthermore, when the complete package is dropped, it is given a constant acceleration by the force of gravity. At the instant of impact with the dropping surface, the outer container ceases motion, but the packaged item compresses the cushion through a distance. During compression, the cushion absorbs all the kinetic energy that the

[2] Developed for the Packaging Section, Picatinny Arsenal, by The General Electric Co., Utica, N. Y.

[3] Statham, Model A5A-100-350 (±100G with a natural frequency of 600 c.p.s.).

[4] Minneapolis-Honeywell "Visicorder," Model 906.

item possessed at the moment of impact and, at the instant of maximum compression, the maximum force is exerted upon the item. Hence, the packaged item also experiences maximum negative acceleration at this specific instant.

Therefore, the following equations have been derived to express the relationship of the factors involved in a dynamic drop test:

$$fm = \frac{(W)\ (Gm)}{A} \qquad (1)$$

Here fm is the maximum stress the item can withstand, in pounds per square inch; W is the weight of the item, in pounds; Gm is the fragility of the item, in Gs; and A is the bearing area of the item on the cushion, in square inches.

Furthermore:

$$T = \frac{(fm)\ (h)}{(em)\ (Gm)} \qquad (2)$$

where T is the minimum required thickness of cushioning material, in inches; h is the height from which the package is dropped, in inches, and em the maximum energy absorbed per unit volume of cushioning material.

Also, it is known that the ratio of the maximum stress on the cushion to the energy absorbed by it can be called the "cushion factor:"

$$\frac{fm}{em} = C, \text{ "cushion factor"} \qquad (3)$$

Thus, substituting relationship (3) into equation (2):

$$T = \frac{(C)\ (h)}{Gm} \quad \text{or} \quad C = \frac{(Gm)\ (T)}{h} \qquad (4)$$

Implementation of test results

Using the dynamic testing equipment and procedure described previously, a series of tests on a specific cushioning-material sample are conducted and a series of values of Gm obtained from the resulting acceleration-time traces. Then, these values of Gm, along with other known data for the specimen—such as W, A, T and h—are substituted into equations (1) and (4) to yield a series of values for fm and C.

These data, with cushion factor plotted as the ordinate and dynamic stress as the abscissa, produce what is known as a cushion factor-stress curve.

Two typical cushion factor-stress curves are shown in Figure 6. The materials represented by these curves are, as indicated, rubberized curled hair and urethane foam. It is to be noted that each curve goes through a minimum with increasing stress. This minimum, or point of lowest cushion factor, is the point of optimum cushioning properties for the respective material since it represents the least thickness of material and, consequently, the maximum efficiency. Also, cushioning materials having broad curves—such as that for urethane foam—can be used to cushion items having a wider range of static loads than cushioning materials represented by relatively narrow curves.

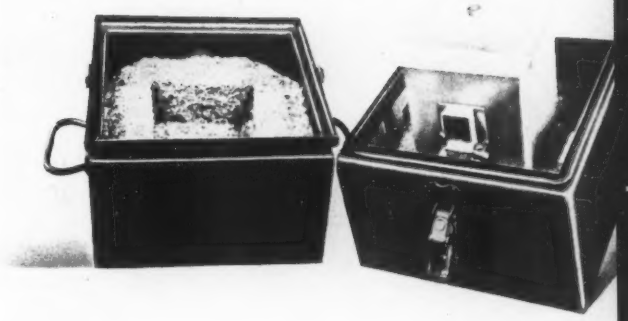


Figure 4. *Steel test container opened, showing cushioning pad and interior test box. Note one of two accelerometers mounted on side of interior test box.*

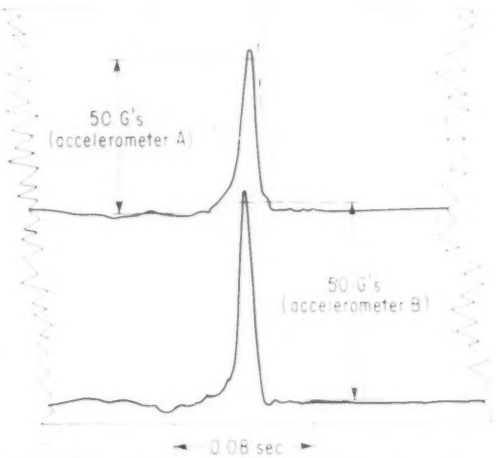


Figure 5. *Typical acceleration-time curves, traced by light paths on sensitized paper. Recording paper is run through a direct-reading recording oscillograph at the rate of 25 in. per second.*

Sample problem

A sample problem will illustrate how cushion factor-stress curves and the design equations can be used to determine the most efficient cushioning for a specific set of conditions. The problem is to determine the minimum thickness of cushioning

material to be used to package an item weighing 2 lbs., having a fragility factor of 60 Gs and a bearing area of 30 square inches. Assuming that the maximum drop height to which the package will be subjected is 30 in., the following calculations should be made:

From equation (1) the maximum stress, fm, can be computed

$$fm = \frac{WGm}{A} = \frac{(2)\ (60)}{30} = 4.0 \text{ lbs. per sq. in.}$$

Then, the minimum required thickness of cushioning material can be calculated using equation (4). However, the value for C is obtained from the cushion factor-stress curve for the material to be used. Since the required thickness, T, of the cushioning material is proportional to cushion factor, C, it is advisable to select the material having the lowest cushion factor corresponding to the maximum stress, fm. Referring to Figure 6, it can be seen in this instance that urethane foam would be the most efficient of the two materials. And its cushion factor corresponding to a dynamic stress of 4.0 p.s.i would be 3. Therefore, the required thickness, T, of urethane foam (polyester type, 2 lbs. per cubic foot density) is

$$T = \frac{Ch}{Gm} = \frac{(3)\ (30)}{60} = 1.5 \text{ in.}$$

Similarly, the packaging engineer can determine the maximum drop height, given a specified thickness and other parameters, or the maximum fragility factor for a given set of variables. Also, he can compute how an increase in bearing area, brought about by redesigning the package, could reduce the required cushion thickness. A series of such curves for several different cushioning materials in varying densities enables the packaging designer to select the most efficient material by choosing the one whose cushion factor is at a minimum for a specific given dynamic stress.

The potential of information in this type of curve is very large. Of course, economic factors must also be considered. Possibly a cushion of material A, 2 in. thick, may cost more than one of material B, in 4-in. thickness. Then, the problem becomes one of judicious balance of material costs against increased cube, tare weight, etc.

Figure 6. Typical Cushion Factor-Dynamic Stress Curves

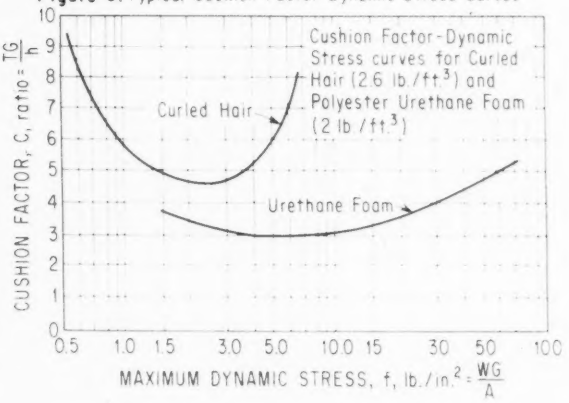
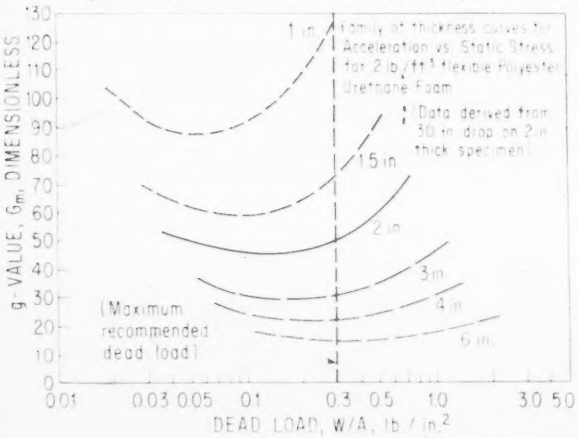

CUSHION FACTOR, C, ratio = TG/h
Cushion Factor-Dynamic Stress curves for Curled Hair (2.6 lb./ft.³) and Polyester Urethane Foam (2 lb./ft.³)
Curled Hair
Urethane Foam
MAXIMUM DYNAMIC STRESS, f, lb./in.² = WG/A

Figure 7. Typical Acceleration-Static Stress Curves


g-VALUE, Gm, DIMENSIONLESS
Family of thickness curves for Acceleration vs. Static Stress for 2 lb./ft.³ flexible Polyester Urethane Foam
(Data derived from 30 in. drop on 2 in. thick specimen)
1 in.
1.5 in.
2 in.
3 in.
4 in.
6 in.
(Maximum recommended dead load)
DEAD LOAD, W/A, lb./in.²

Other factors

It has been explained that the concept of the cushion factor-stress curve is a most valuable one, since it permits a single curve for a given density of cushioning material to be used in design work for several cushion thicknesses or drop heights. However, recent studies have indicated that cushion factor-stress curves are feasible for use principally with non-pneumatic cushioning materials. When some so-called "pneumatic" materials (those materials whose cell structure and/or resultant entrapped air cause the cushion to behave erratically – e.g., some forms of flexible urethane foam) are tested, it is found that the path of the cushion factor-dynamic stress curve changes as the thickness of the cushion being evaluated is varied. Therefore, in the relatively few instances when a cushion factor-stress curve is for any reason found to be impractical, acceleration-stress curves can be used.

The acceleration-static stress curve is essentially a plot of the variation of maximum acceleration (or deceleration) as a function of the static weight per unit area of the load. A single acceleration-static stress curve represents the dynamic compressive response of a single cushion of a particular thickness, density, type, etc., to loadings made at a constant rate with various weights. Several acceleration-static stress curves for different thicknesses of a flexible polyester urethane foam are shown in Figure 7. [*Continued on page 262*]

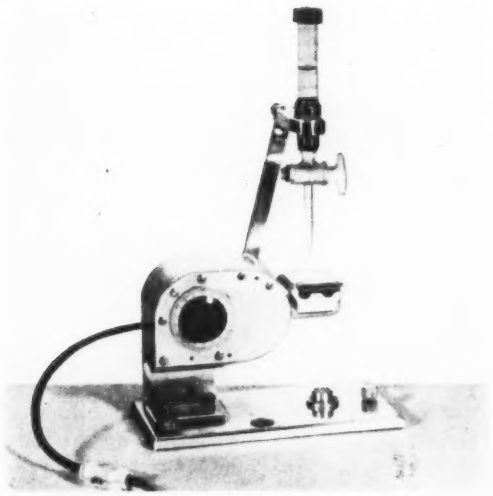


Figure 1. *Improved model of inclining-platform tester, showing motor-drive housing with indicating dial; sample in place on platform, and shortened laboratory burette, with distilled water, above.*

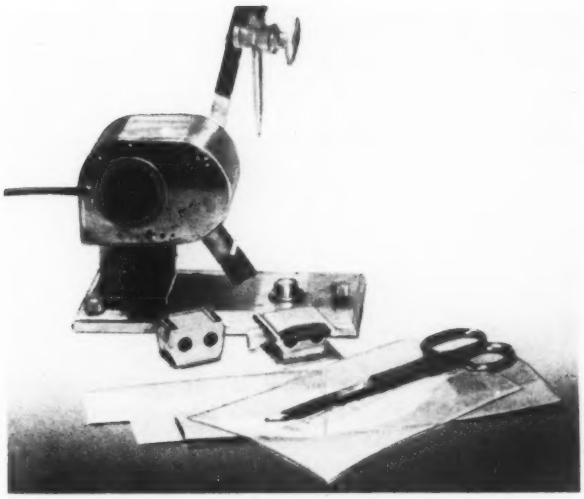


Figure 2. *Two types of test platforms are shown in front of unit: one at right has raised flat section and a spring clamp; the other, for stiff materials, has a three-sided adjustable frame.*

Test for polyethylene printability

A new inclining-platform instrument measures the angles at which drops of water slide from treated films, giving accurate ratings with speed and simplicity. *By T. F. McLaughlin Jr.**

The degree of the treatment on polyethylene surfaces to improve their printability may be measured by several established methods. These include the cellophane tape test (4),[1] the Chapman test (3) and a test which has recently been described by Wechsberg and Webber (5).

This paper describes a new technique which offers a desirable combination of accuracy with speed and simplicity not found in previous methods. In this new test, measurements are made on a special instrument of the angles of inclination at which uniform drops of distilled water slide from treated surfaces. These angles are found to correlate with the printability of the surfaces.

Treating methods

Polyethylene exhibits a wax-like, non-polar surface which is not receptive to high-speed, quick-drying printing inks. Numerous treating processes have been devised to alter this surface to make it wettable, hence printable or gluable.

A plethora of patents exists covering three fundamental techniques of treating polyethylene surfaces to improve the adhesion of inks.

1. Treatment with oxidizing chemicals with, or without, the catalyzing effect of ultraviolet light.
2. Exposure to various parts of gas flames.
3. Exposure to electrical discharges via corona or contacting surface electrodes.

Of the three fundamental techniques listed, the flame treatment (6, 7) and electrical discharge (8, 9, 10, 11, 12) methods are found to have the widest commercial acceptance.

The claims in several of the patents for processes to render the surface of polyethylene printable, as well as the results of special studies performed by our Research Division (1, 2), point to the formation of polar groups in the polyethylene surface structure. These polar groups may be formed by numerous combinations of chemical reactions in-

*Technical Services Laboratory, Polychemicals Dept., E. I. Du Pont de Nemours & Co., Inc., Wilmington 98, Del.

[1]Numbers in parentheses identify References appended.

volving components of the flame, the air, chemical additives and the polyethylene itself. They are accelerated by the localized intense heat of combustion, by corona or by photochemical action.

Standard test methods

The standard tests commonly used to determine the effect of pre-printing treatments on polyethylene surfaces measure the adhesion of other materials to the treated polyethylene surface.

Two such tests rate the ability of a treated polyethylene surface to hold a flexographic-type ink. The cellophane tape test (4) is a rapid, qualitative evaluation. In this test the tape is pressed against an inked surface and then removed with a quick pull. A rating is given to the amount of ink remaining on the surface. The Chapman (3) test utilizes the ink as an adhesive between two identically treated film surfaces. An Instron universal tensile tester is then used to pull the two film surfaces apart, which results in giving a quantitative measure of the bond strength.

Another test which has recently been described by Wechsberg and Webber (5) measures the adhesion of a special pressure-sensitive tape directly to the treated surface of a film.

Inclining-plane theory

Satisfactory ink or glue must show an affinity for (i.e., wet) the solid surface upon which it is applied. This affinity to the surface by liquids can be defined in terms of the contact angle formed between the surface and the drop of liquid resting on it (1). Complete wetting occurs when the contact angle is zero, while angles greater than zero indicate lesser degrees of wetting. It has been shown that the contact angle of a drop of distilled water resting on a surface of treated polyethylene can be correlated with the final ink adhesion (1). The actual contact-angle measurement, however, requires rather intricate and precise optical equipment.

The same phenomenon of surface wetting that defines the contact-angle system can also hold the liquid drop, in place, against the component force of gravity as the solid surface is slowly tilted, at a constant rate, from its original horizontal position. The angle of inclination at which a standard-size liquid drop begins to move thus becomes another criterion of surface wettability. A more-intense surface treatment, inducing greater wettability of the surface to a liquid drop, will require a larger component of gravitational force to cause the standard-size liquid drop to slide from the surface. This larger component of gravitational force is obtained by inclining the surface of the polyethylene film to a greater angle from the horizontal. A correlation is thus obtained between the intensity of the surface treatment on the polyethylene film and the angle of inclination.

The new instrument

For conducting angle-of-inclination measurements, a new instrument was designed and built. Its mechanical features and operating procedures permit both simple and rapid tests. Figure 1 shows a photograph of this new instrument, which consists of the following components: a rectangular base, a motor-drive housing with indicating dial, a test platform which is removable from a driven support arm and a shortened laboratory burette.

The instrument has two types of test platforms (Figure 2). One, for use with flexible materials, has a raised flat section and a spring clamp. The other, which has been designed for use with stiff materials, has a three-sided adjustable frame.

In the starting position, the arm supporting the test platform must be horizontal to give a zero reading on the indicating dial. The test platform can be removed from its supporting arm for mounting of the sample by a spring clip or by an adjustable frame. The supporting arm is driven by a small synchronous electric motor with gear train; it moves at a rate of 1 deg. per second. The indicating dial on the side of the instrument is geared to move at four times the speed of the arm; hence, one complete rotation of this dial corresponds to the maximum inclination of 90 deg. of the supporting arm. The dial is graduated in increments of 1 degree.

A convenient clutch arrangement on both the

Figure 3. *Instrument in use. As platform tilts steadily lower at rate of 1 deg. per second, operator stops action at instant the drop begins to slide and takes reading from the dial.*

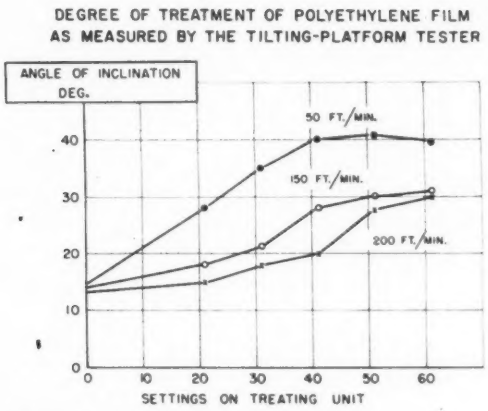


Figure 4. *Angle of inclination vs. level of surface treatment as indicated by settings on electrical corona discharge treating unit.*

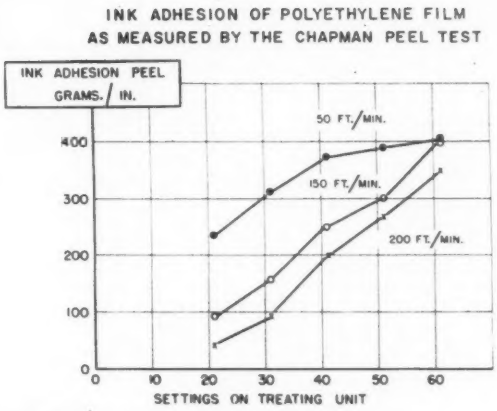


Figure 5. *Chapman Peel Test values vs. same settings on the treating unit for the identical samples as those in Figure 4.*

supporting arm and dial gears permits manual resetting of these components. This feature adds greatly to the speed of operation of the instrument.

To deliver a reproducible, standard-size drop to the sample on the test platform, a shortened burette is mounted above, as shown in Figure 1. This is a standard laboratory type of burette, shortened for convenience, which delivers 25 drops of distilled water per milliliter. The volume of each drop is therefore 0.04 ml., which has been adopted as a standard measurement for use in this test.

Test procedure

A specimen of treated film or laminate is cut and clamped to the test platform.

The test platform is placed on the end of the horizontal support arm, where it is automatically centered and leveled by a key slot. The burette is positioned above the center of the platform so that the drop will fall on the flat section. For best results, the tip of the burette should be no more than ½ in. above the surface being tested. To assure uniformity in the sizes of the drops formed from the tip of the burette, the first drop to release should be intercepted with the blade of a spatula or piece of paper and the second drop permitted to fall onto the polyethylene surface. For reproducibility of the results of the tests, distilled water was used in all tests conducted with this instrument.

With the test platform in the horizontal position and with the dial indicator set at zero, the electric-drive mechanism is started by pressing the button in the electric-cord switch. The supporting arm with test platform tilts at a constant rate of 1 deg. per second until the drop begins to slide down the inclined surface (Figure 3). At this instant the stop button is pressed, securing the entire mechanism in its inclined position. The angle of inclination can then be easily read from the indicating dial.

In addition to the intensity of surface treatment, a number of variables can influence the angle of inclination at which the standard drop of liquid begins to move on the tilted surface. These variables include the ambient temperature and relative humidity, additives in the base resin, processing conditions of the resin, surface tension of the liquid and the contact of foreign material with the surface in question. Similarly, the accuracy of the test is determined by the tightness of the specimen on the platform and the ability to detect when the drop first moves down the surface of the film. In order to obtain reproducible data it is important, of course, that these conditions be controlled.

Results

Consistent readings were first obtained for the angle of inclination at which a drop of distilled water slid from untreated surfaces of polyethylene film. One untreated sample, whose mean angle of inclination measured 19.0 deg., was tested and statistical calculations revealed that 95% of all values were within ±1.54 degrees.

For treated polyethylene surfaces, a correlation has been shown to exist between the degree of preprinting treatment and the angle of inclination at which a drop of distilled water slides from the surface. The consistency of data obtained seems to confirm the reliability of this test.

The Chapman test for printability of polyethylene films is generally accepted as the most quantitative ink-adhesion test. Samples of treated film which had been graded by the Chapman test were also graded by this new instrument to obtain a direct comparison. Figure 4 shows a plot of the angle of inclination vs. the level of treatment on the surface as indicated by the settings on the electrical

corona discharge treating unit. Figure 5 is a plot of the Chapman peel-test values for ink adhesion vs. the same settings on the treating unit for the identical samples as in Figure 4. These data point out the variation in ink receptivity of polyethylene film with increasing intensity of treatment of the material at different film speeds.

During the extrusion coating of polyethylene onto substrates such as paper, cellophane, Mylar and metal foil, it is sometimes desirable to permit surface oxidation of the molten web, by contact with the air, in the gap between the extruder die and the nip of the coating and pressure rolls. In many cases this surface oxidation gives a desirable increase in the bonding of the polyethylene to the substrate. However, because the molten web is oxidized on both sides, this same oxidation which can be beneficial to adhesion may become detrimental to the subsequent heat sealing of the laminate. Past experience has shown that surface treatment or oxidation of polyethylene may necessitate higher heat-seal temperatures on the sealing jaws of packaging machines.

Samples of polyethylene-coated kraft papers prepared by the extrusion-coating process at several extrusion-die stock temperatures and at several coating speeds were tested on this new instrument. The results of these tests are shown in Figure 6. It may be readily seen that, as expected, a greater degree of surface oxidation takes place at the slow coating speeds and higher stock temperatures.

Conclusions

This type of data can be used by extruders, printers and converters to predict the level of pre-printing treatment necessary to achieve adequate ink adhesion. A comparison between Figures 4 and 5 indicates that this new instrument can be used to measure the extent of pre-printing treatments on polyethylene surfaces. Such data can also find application in extrusion-coating operations, for quality control. Since the affinity of the drops actually gives a measure of wettability over a small area of the film surface, non-uniformity of treatment or—in the case of coated materials—non-uniformity of extrusion conditions can be readily detected by a wide variation in the type of data obtained from the same samples.

Other potential uses for this new instrument may be in the determination of surface roughness of untreated polyethylene; a similar technique has already been used to measure the surface roughness of metals (13) and in the determination of rate of additive migration to the surface of polyethylene film. In this latter instance, the parameter of time would be used with the angle of tilt.

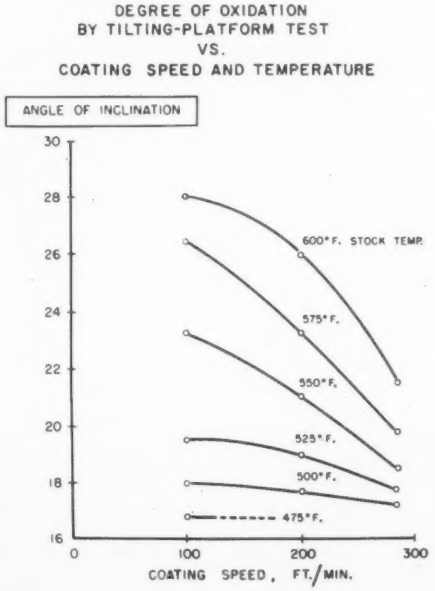


Figure 6. *Results of tests on extrusion-coated-polyethylene kraft samples, showing that a greater degree of surface oxidation occurs at slow coating speeds and higher temperatures.*

Acknowledgments

The Inclining Platform Tester (the improved model shown in the pictures with this article) was designed and built by the Precision Machine & Development Co., P.O. Box 645, New Castle, Del.

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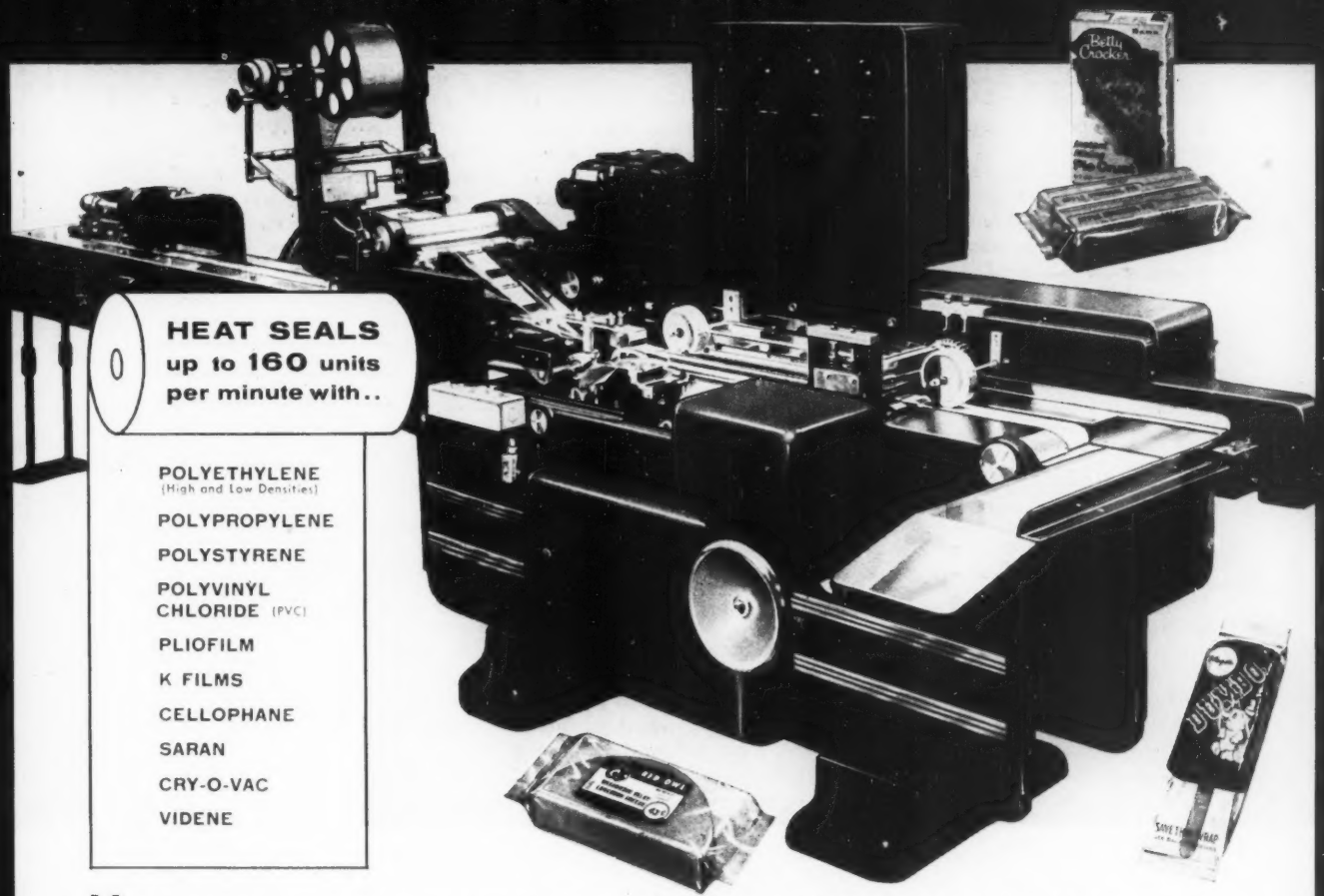

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Skin-tight wrap for books

Q: *We would like to apply a very tight wrap of transparent film on expensive text books before they are packaged for shipping. Can you tell us what type of film to use and whether there is an automatic packaging machine that can handle this type of operation?*

A: There are about eight shrinkable films on the market today and most of these would make an ideal skin-tight package for your books. The materials vary from thin, saran-type films and special vinyls to irradiated polyethylene and a new polyethylene that derives its shrinkability from a special blowing process. Prices of these materials vary considerably, but all are bioriented and must be treated carefully in heat sealing to assure a good seam. In the way of machinery, there are two machines for wrapping phonograph records and other products that are specifically designed to handle these shrinkable materials and form the heat seals at the edges of the product so that the seam does not obstruct a view of the product. One is a vertical, semi-automatic unit that must be hand fed and produces from 35 to 40 units per minute. It costs approximately $1,500 and operates on tubing, which is slit on one side to insert the product.

The other machine is a new unit that is automatic in operation and sandwiches the product between two film webs, fin sealing the film with impulse heaters. Costing about $7,400 with the feed unit and a shrink tunnel, it runs at only 26 packages per minute, but saves one operator. Potential speed is reported at 40 packages per minute.

There are several conventional horizontal form-fill-seal machines on the market—mostly costing a good deal more. While none of the manufacturers has notified us that these units can handle the new shrinkable materials, it is possible that at least some should be easily adapted to these films. Some units operate on two webs, while there are others that form pillow pouches with a center seam at the back.

Pouch pack for tobacco

Q: *Can you tell me how I could make a double-wall plastic pouch package for tobacco with a printed and registered web of paper sandwiched in between the plastic layers and a fold-over flap closure?*

A: This package (which was from Denmark and was enclosed with the letter) is made from 2-mil tubular polyethylene film, probably produced by hand, since the printed paper web and tube run in a cross direction to the length of the pouch.

There is no specific machine that we know of for making such a package in this country, but it might be possible to create a similar package on a standard bag-making machine with only a few modifications necessary in the package.

Three roll feeds, two with plastic films and one with a paper web that would be sandwiched in between, should take care of the plastic-paper sandwich. The other basic forming operation, folding and heat sealing of a lip-type bag, can be accomplished on standard equipment. Prior to this stage, of course, two extra heat seals would have to be applied to the top edge of the flap and the mouth of the pouch to enclose the paper hermetically in the plastic, but this should not be too difficult to work out.

Stiffness test for thin materials

Q: *Our laboratory is interested in methods that can be used to measure the stiffness of various types of films and thin papers.*

We use many different kinds of packaging materials and their stiffness or softness variations could affect our machine operations, as well as the feel and appearance of our packages. We would like a test that is rapid in performance and which would give the result as a simple number which directly correlates with this property.

Can you suggest a method or test machine that will meet our requirements for measuring stiffness of flexible packaging materials?

A: Stiffness or softness is an important property of many films and thin papers, since it can affect machine operations as well as consumer reaction to a packaged product. Over the years there have been a number of test methods and testing machines designed to measure this property of flexible materials. However, some of these tests do not apply to very thin or very soft materials, and others are designed to give values that are calculated indices of either stiffness or softness.

The simplest test method for softness appears to be the "Handle-O-Meter," which was developed as a control test for the manufacture of thin tissues, to measure the "hand." It is reported to give a reliable index of this subjective property.

In this test, the sample is pushed through a slot and the maximum force is recorded in grams as the value. The higher the reading, the greater the stiffness, so that the values correlate directly. The test can be performed in a few minutes, so that it would be useful as a production-control test.

This test is described in more detail in Federal Specification UUP-556-E for tissues, obtainable from the General Services Administration, Washington 25, D. C.

We are sure that this test will meet your general requirement, but suggest that you evaluate it for your own particular needs and especially for each of the many different film and paper materials that you use.

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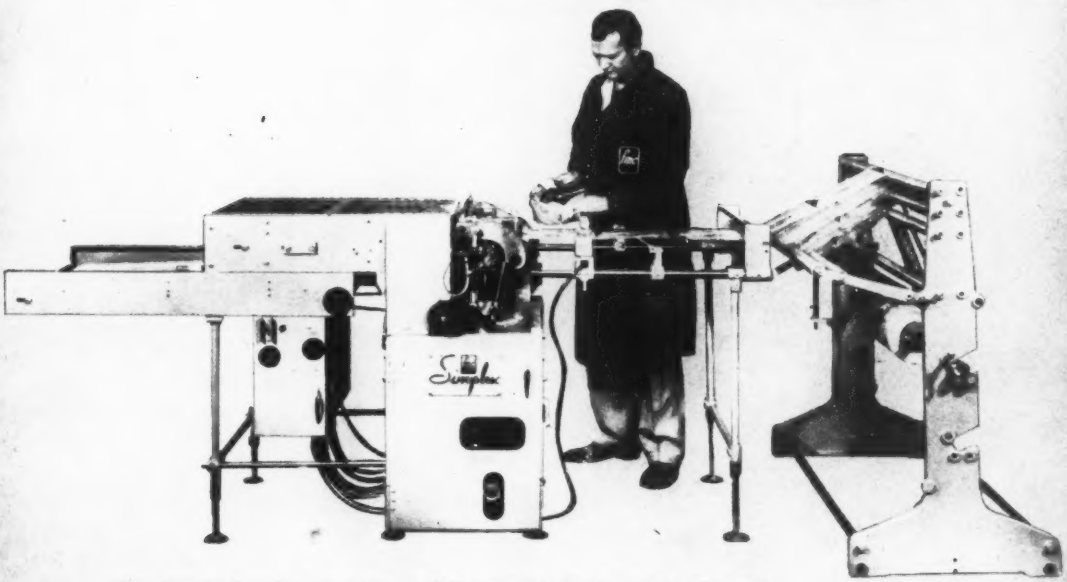

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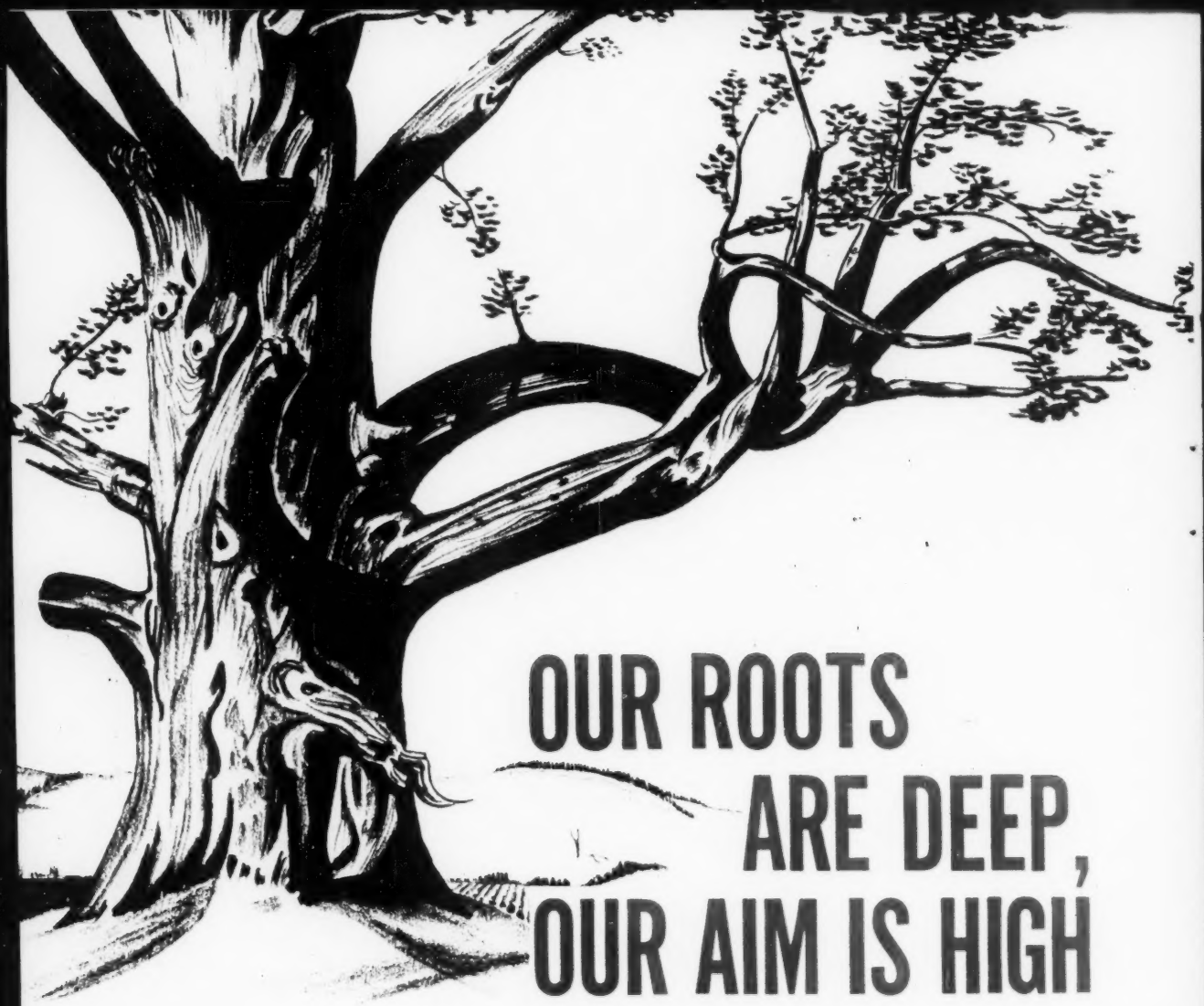

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Plants & People

The boards of directors of **Riegel Paper Corp.** and **Lassiter Corp.**, both New York, have signed an agreement proposing a merger of the companies. Following ratification of the agreement by stockholders, Lassiter will become a div. of Riegel, continuing under its present management. In addition, **J. Hanes Lassiter**, founder and pres. of Lassiter, will become a v.p. and director of

Leinbach *Lassiter*

Riegel. According to a joint announcement by Mr. Lassiter and **Frederick S. Leinbach**, pres. of Riegel, the merger will result in a more integrated and diversified packaging-supply business. Riegel, a producer of flexible-packaging materials, paperboard, pulp, folding cartons and specialty papers, earlier this year acquired **Bartelt Engineering Co.**, packaging-equipment manufacturer. Lassiter is a converter of packaging films.

Henry W. Wyman has been elected pres., **Charles A. Wyman** becomes board chairman, and **Harry A. Russell** has been promoted to exec. v.p. of the **Pantasote Co.** of Passaic, N. J. The company is a manufacturer of plastic products, including vacuum-formed packaging materials.

R. F. Smith has succeeded **E. G. Muir** as head of the sales-development section of **Bemis Bro. Bag Co.**, St. Louis. Mr. Muir has transferred to Seattle as asst. mgr. of the company's Seattle plant and Pacific Northwest sales. **R. P. Welch** has taken over Mr. Smith's former duties as market research mgr. in the gen. sales dept. **J. D. Richards** has been named mgr. of the Seattle plant and Pacific Northwest sales div. in Vancouver. **J. M. Prudhomme** has been promoted to mgr. of the Vancouver multiwall plant. **F. W. Ayers** is now managing the Wilmington, Calif., plant and the Los Angeles sales div. **L. L. Conrad, Jr.**, becomes mgr. of Bemis' San Francisco plant and sales div. **G. E. Cook** and **R. E. Revell** are sales mgrs., respectively, of the Pacific Northwest and Los Angeles divisions.

Norman H. Gunderson becomes mgr. of the **Mid-States Gummed Paper Div., Minnesota Mining & Mfg. Co.**, St. Paul. He succeeds **W. G. Bretson**, who has been promoted to a new assignment. Mr. Gunderson, who joined 3M in 1947, had been serving as Chicago branch div. sales mgr. since 1952.

The Packaging Div. of **Olin Mathieson Chemical Corp.**, New York, has initiated a formal program of package-design education for its salesmen. **Saul Nesbitt**, director of **Nesbitt Associates**, package and industrial designer, will conduct the program. The company expects the design program to help salesmen give customers more effective assistance in developing packages adapted to specific marketing objectives. Essentials of the program include elements of package design, graphics in design, relationship of selling policy to a package, corporate image and the package, and rating of a package.

Spencer Chemical Co., Kansas City, has begun sales of its "Poly-Pro" polypropylene. In conjunction with first commercial distribution of the new product, the company has announced a series of seminars on the injection molding of polypropylene to be held this September. Injection molding is one of the primary areas in which Spencer is concentrating its sales and technical effort for the new resin. The one-day seminars are being held in Boston, New York, Cleveland and Chicago.

Allen Staley has been elected v.p. of sales at **The Lord Baltimore Press**, New York. He was formerly asst. to the pres. **Roland F. Boehm** has been named administrative asst. to the exec. v.p. He will supervise new-product development and handle special management assignments.

Armstrong Cork Co., Lancaster, Pa., has named **Roger H. Hetzel** v.p. and gen. mgr. of Packaging Materials Operations. At the same time, **Robert M.**

Hetzel *Ulmer* *Feagley*

Ulmer becomes gen. sales mgr. of the Packaging Materials Div., succeeding Mr. Hetzel. Mr. Ulmer has been asst. gen. sales mgr. of the glass-container sales since 1958. Mr. Hetzel takes over from **Joseph C. Feagley**, who is retiring after 47 years with Armstrong. **Curtis N. Painter** succeeds Mr. Feagley on the board of directors.

John D. McPherson has been elected pres. and a director of **Jefferson Chemical Co.**, Houston, Tex. He succeeds **George R. Bryant**, who is retiring. Mr. McPherson joined the company as v.p.-operations in 1955.

Lawrence G. Schnauz has been promoted to Eastern regional packaging sales mgr. by **Reynolds Metals Co.**, Richmond, Va. He succeeds **C. H. Davis**, who has been named packaging sales mgr. for the Pacific region.

John W. Schmid has been appointed advtg. and sales-promotion mgr. of **Plax Corp.**, Hartford. **Ralph H. Smith** becomes sales mgr. for plastic cartons. Mr. Schmid comes to Plax after eight years with **Du Pont**. Mr. Smith formerly was with **Diamond National Corp.** In his new capacity he will be responsible for the marketing of Polyflex biaxially oriented polystyrene film and sheet as a material for cold-formed cartons.

Schmid *Smith*

T. A. Langstroth is new technical director of the Chemicals Group of **Sun Chemical Corp.**, New York. He will be working on exchange of information and the advancement of projects of each of the group's divisions at home and abroad. Under Mr. Langstroth's direction it is planned to broaden the Chemical Group's product lines and enter new markets.

William P. Peters has been named gen. mgr. of research and development for the folding carton and boxboard divs. of **Container Corp. of America**, Chicago. **Benjamin A. Ruf** succeeds Mr. Peters as gen. mgr. of the company's folding-carton operation in Renton, Wash. Mr. Ruf's former duties of sales mgr. at the Renton plant have been assumed by **Wallace R. Soli. Ervin F. Bickley, Jr.**, has been named gen. mgr. of all national account sales for the folding carton division.

Ekco-Alcoa Containers Inc., Wheeling, Ill., has appointed **John W. Carlile** as gen. mgr.-mktg. services, with responsibility for all staff activities in marketing of the company's products. Mr. Carlile has more than 20 years of experience in packaging and merchandising, his most recent position being that

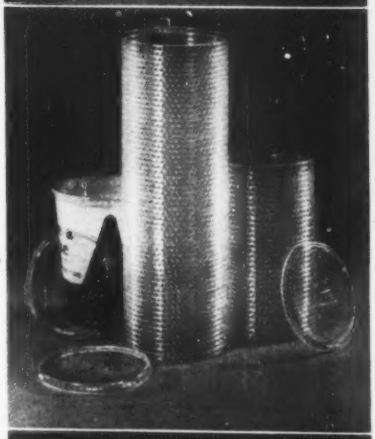
SIX SUCCESS PACKAGES

Pressure-Formed in Plastic by PLAXALL

ANSCO'S flash camera outfit may be displayed upright or hanging. Contoured plastic provides complete visibility and overall package strength.

AMPLEX packages fragile flash bulbs in eye-catching Slideplax. Perfect display plus product protection.

CHAPSTICKS are neatly held in the undercut cavities of this new dispensing counter display. In assembly, the yellow styrene forming slides readily onto the cardboard easel.



MILLIONS of oriented styrene closures produced at lowest cost on Plaxall's high speed precision pressure-forming equipment. Used by leading food and beverage companies throughout the world on paper cups and tubs.

GILLETTE'S new adjustable razor is now packaged in Plaxall's Blisterplax —a butyrate blister pressure-formed for unusual uniformity and strength, and heat sealed onto a display card.

LIGGETT & MYERS cigarette and lighter combination looks like a good buy — and is. Smartly packaged in clear acetate by Plaxall to effectively create impulse sales.

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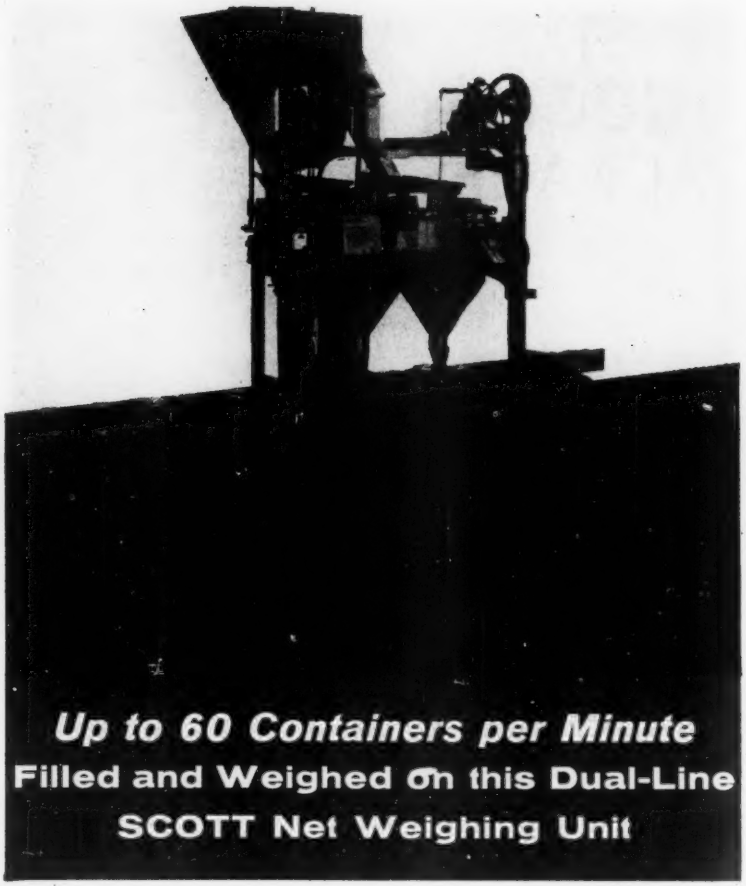

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For complete details on what the dual-line Scott weigher can do for your packaging operation, send us complete details on the types of products and containers you run, and the weight range and speed you require.

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Plants & People *(Cont'd)*

of sales mgr.-folded plastics with **Plax Corp.** Prior to his association with Plax, Mr. Carlile was with the former Shellmar Products Company.

William J. Stewart is newly elected pres. and gen. mgr. of **Kimble Glass Co., sub. Owens-Illinois Glass Co.** His predecessor, **Raymon H. Mulford,** has transferred to the O-I Administrative Div. Both Mr. Stewart and Mr. Mulford are O-I v.p.'s **W. Boyd Owen** has succeeded Mr. Stewart as director of personnel administration for the company. **William J. Graham** has been named to the newly created position of industry sales mgr. for closures in O-I's Glass Container Div. He was formerly blown-plastic sales mgr. for the Closure & Plastics Division.

Stewart *Graham*

New gen. mgr. of sales for the Bondware Div. of **Continental Can Co.,** New York, is **M. W. Ashby.** Previously sales mgr. of the Plastic Bottle & Tube Div., Mr. Ashley succeeds **M. C. Alex,** who has resigned. Mr. Ashby joined Concan in 1955 after its merger with American Paper Goods Co., where he started his business career.

St. Joe Paper Co., Jacksonville, Fla., has acquired the facilities of **Columbia Container Corp.,** Baltimore, and an affiliate company, **Columbia Container Corp. of Virginia.** No changes in plant personnel are contemplated. The two new acquisitions bring to 11 the number of plants operated by St. Joe.

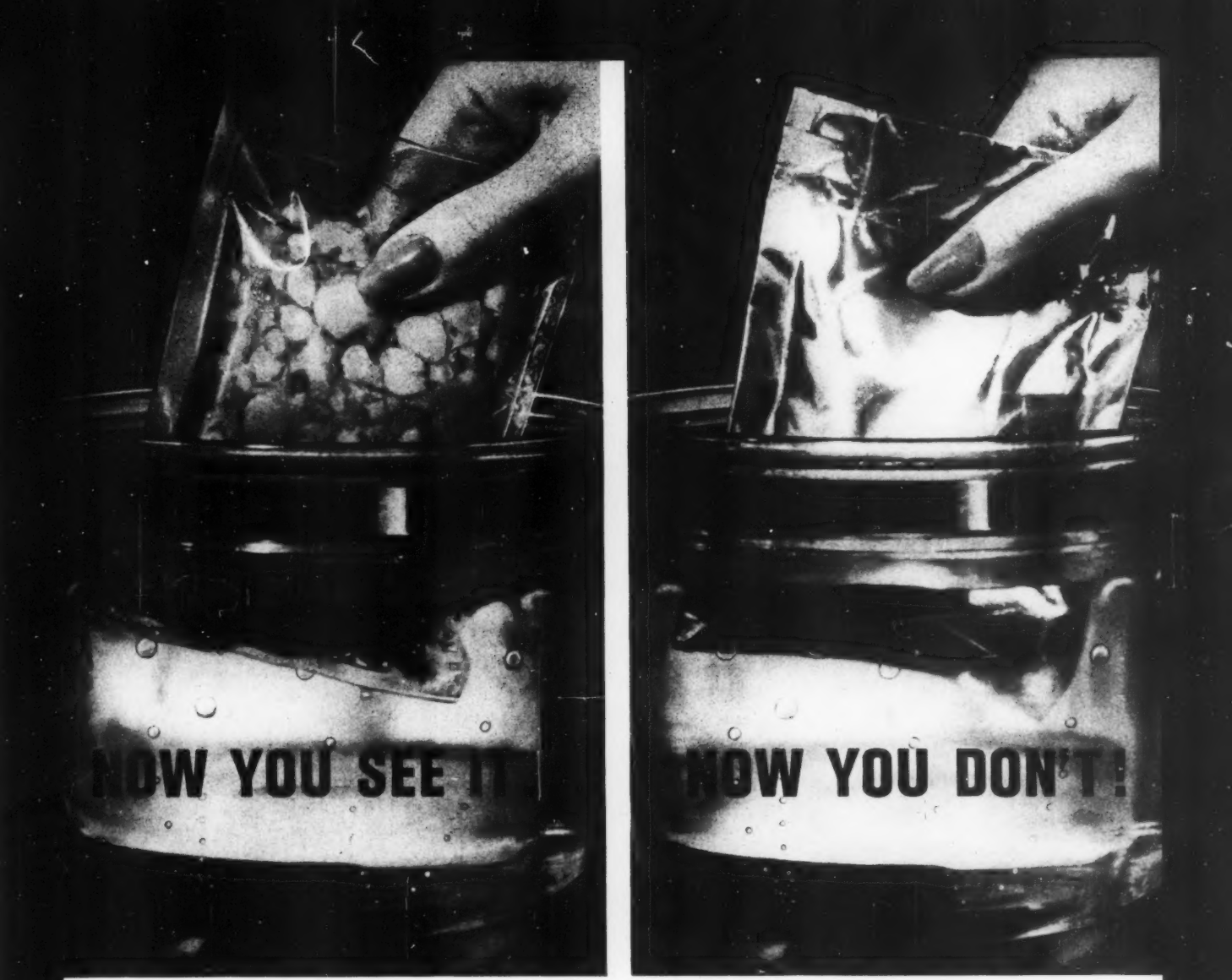
Everson

J. W. Everson has become mgr. of the market research dept. of **The Dow Chemical Co.,** Midland, Mich. He succeeds **Parker Frisselle,** now in charge of the sales-development group working on Dow's consumer products. Mr. Everson, who joined the company in 1946, has been serving as asst. mgr. of the dept. since 1953. He is pres. of the **Chemical Market Research Association.**

Allied Chemical Corp., New York, is building a new plant at Baton Rouge, La., for commercial-quantity production of "Aclar" fluorohalocarbon-film resin. (See "Film With 'Zero' Moisture Absorption," this issue, p. 54.) The company also has begun an expansion of its Morristown, N.J., research center, to provide for an increase in fluorochemical research projects.

Concurrent with the appointment of **John W. Brooks** and **Richard W. Kix-Miller** as new exec. v.p.'s, **Celanese Corp. of America,** New York, has an-

[Continued on page 170]



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Want product *visibility?* Print-a-Tube transparent boil-in-bag packages give appetizing foods a chance to show off. Want maximum *display?* You can print over the entire foil surface of Print-a-Tube opaque boil-in-bag packages.

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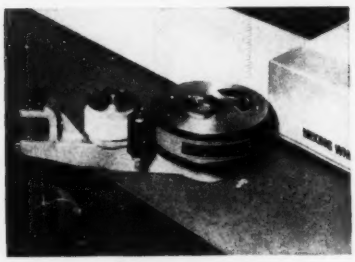

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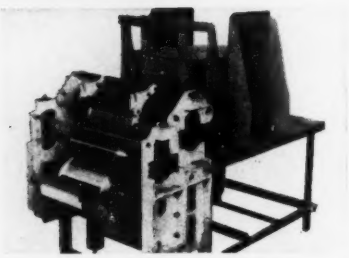

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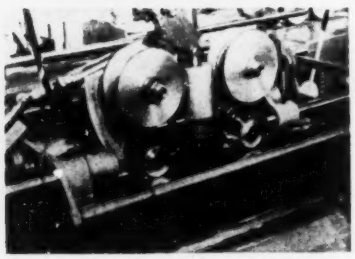

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Plants & People

[*Continued from page 167*]

nounced a realignment of certain divisional operations. The number of operating divisions has been increased from three to four. To the existing **Celanese Fibers Co., Celanese Chemical Co.** and **Celanese Plastics Co.** are added **Celanese Polymer Co. Mr. Brooks** will direct the Fibers and Plastics companies and Mr. KixMiller is responsible for the Chemical and Polymer companies. Newly appointed operating heads of the four divs. are: **Peter H. Conze,** pres. of Celanese Fibers Co.; **William P. Orr,** pres. of Celanese Polymer Co.; **David Taylor,** pres. of Celanese Plastics Co., and **James H. Worth,** pres. of Celanese Chemical Co. Celanese Chemical has appointed **Robert L. Mitchell** to the newly created post of v.p.-planning. Within Celanese Plastics Co., two promotions are in effect. **Edward W. Ward** is now v.p. and director of mktg. and **Frank B. Cameron** has become v.p. and mgr. of manufacturing. **Harold L. Sheppard,** long associated with Celanese plastics operations, has been named special advisor to David Taylor. Celanese Polymer Co. has named **James W. Flynn** as v.p. and director of mktg. **Dr. Russell N. Clark** will serve as v.p. and technical director. The Celanese Polymer Co. Div. is responsible for producing and marketing basic polymers and plastic molding compounds.

Foote

Grover L. Foote is now product mgr. of the Film & Paper Div. of **Milprint, Inc.,** Milwaukee. He is in charge of analyzing current applications of film and paper packaging and developing new uses. Mr. Foote comes to Milprint from the **Visking Div. of Union Carbide,** where he was asst. product mgr. for plastic films for the packaging field.

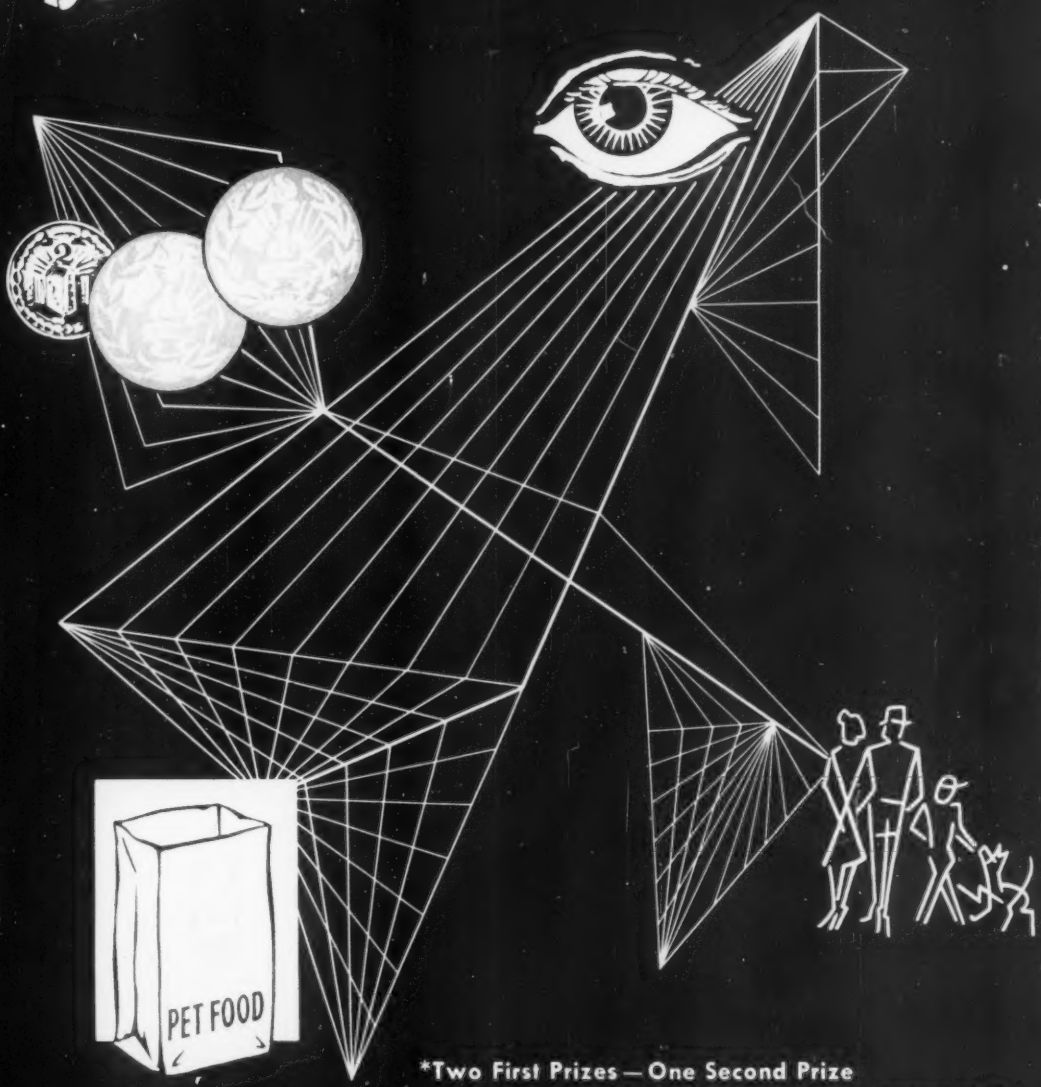
Alvin R. Wilson has joined the **Cel-Fibe Div. of Personal Products Corp.,** Milltown, N. J., as product development mgr. He will work on C-B bonded wadding and other forms of cellulose wadding. The line is used for protective packaging of military, industrial and consumer items as well as for many other purposes. Mr. Wilson will act as a technical link between the engineering and sales depts. He was formerly technical director of **Permacel-LePage.**

Henry Lang and **Harold A. Smith** have been elected to the board of directors of **The Hamersley Mfg. Co.,** Garfield, N. J. Mr. Lang is exec. v.p. in charge of production. Mr. Smith is v.p. of mfg. for the paper-supplying firm.

John C. Fedoruk has been named tech. director of the General Chemical Div. of **Allied Chemical Corp.,** New York. He succeeds **Dr. Howard H. Hurmence,** now asst. director of research and development for the corporation. With the

[*Continued on page 175*]

Packaging Winners



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Standard Roll-On Closures—replace prethreaded caps in hundreds of food, beverage, chemical and pharmaceutical applications. Like all Roll-On caps, every closure is custom-tailored to the individual bottle, assures the greatest sealing quality.

Stericaps—these tear-off caps are the most widely accepted and used in medicines and pharmaceuticals. They seal airtight, are tamperproof, assure retention of quality, strength, sterility and laboratory freshness.

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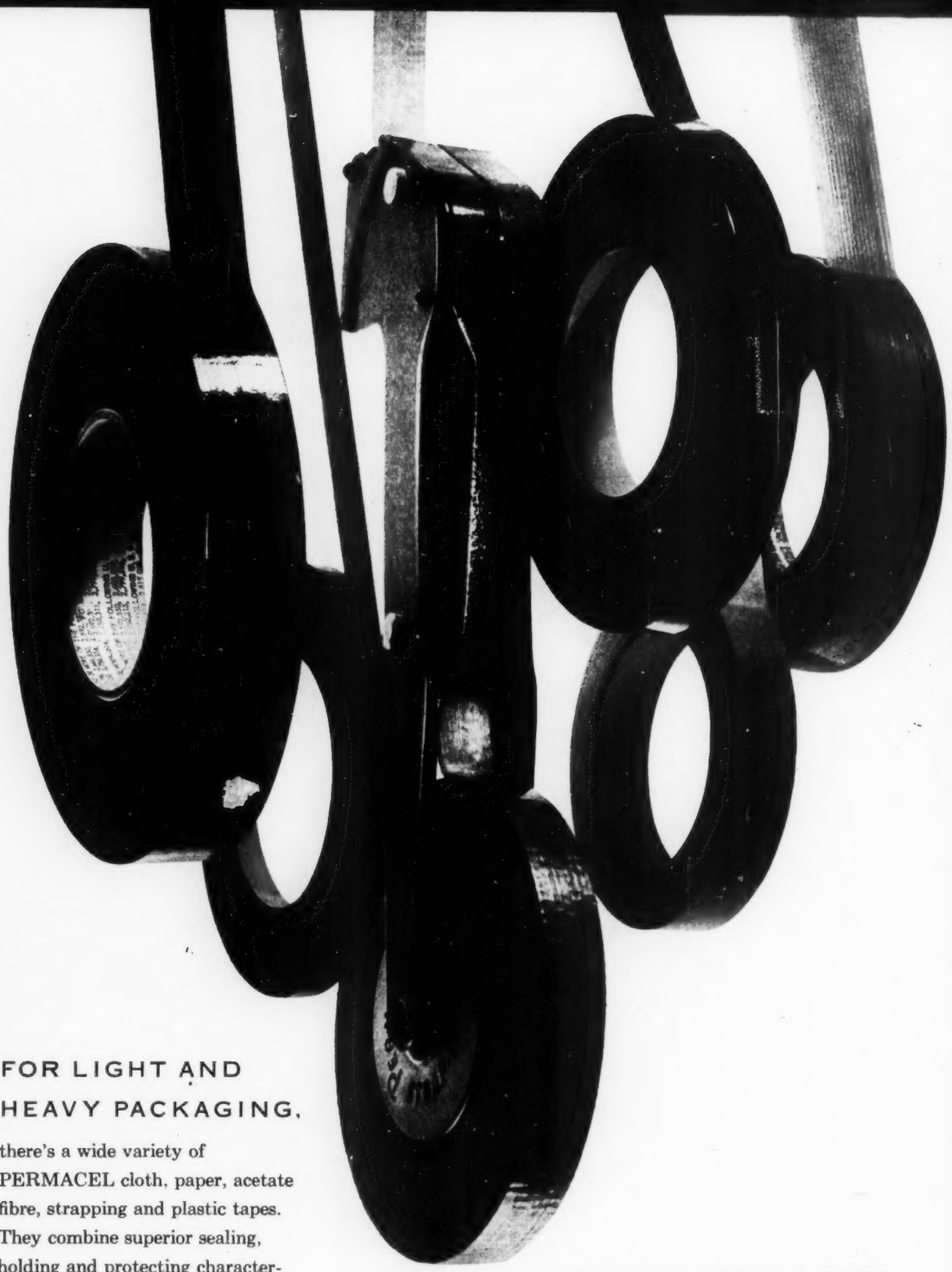

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Plants & People

[*Continued from page 170*]

div. 19 years, Mr. Fedoruk was asst. tech. director for the past six. He is headquartered at the div.'s laboratory in Morristown, N. J.

Lawrence

A new company, **Air-Lite Products, Inc.**, has been formed by **Alfred A. Lawrence**, former New England sales mgr. for **Dow Chemical**. Mr. Lawrence is pres. of Air-Lite, which is exclusive sales and service agent for a new line of foamed polystyrene produced by **Plastifoam Corp.**, Rockville, Conn. The foam will be marketed for use in packaging as well as for industrial, display and other applications. Air-Lite's address is 263 Fifth St., Cambridge, Mass.

Dr. Emil Ott has resigned as v.p. for research and development for **Food Machinery & Chemical Corp.**'s Chemical Div., New York. He will continue as part-time consultant for the company and will devote his time to academic activities. Prior to joining FMC in 1955, Dr. Ott had spent 16 years as research director for **Hercules Powder Co.**

In order to make more effective use of new technology in the company's operations, a three-million dollar technical center is to be built by **St. Regis Paper Co.**, New York. Construction will begin late this year on a site in Clarkstown, N. Y. When completed, the center will consolidate research and development activities of a broad nature now being conducted at several other locations, says the company. Programs to be undertaken will relate to materials utilization, printing papers; kraft pulp, paper and board; bags, packaging, plastics and other products.

Harlan Longnecker has been appointed sales mgr. of the Specialties Div. of **KVP Sutherland Paper Co.**, Kalamazoo, Mich. Mr. Longnecker, who joined the company in 1937, succeeds **George Gard**, resigned.

Pearson

A reorganization of marketing activities and the appointment of a director of mktg. was recently announced by **Avery Label Co.**, Monrovia, Calif. **Richard J. Pearson** has joined the company as the new director of mktg. Reporting to him are **M. A. Contreras**, field sales mgr.; **R. W. Morris**, market-development mgr. and **W. G. Proper**, customer service mgr. Mr. Pearson was formerly mdsg. mgr. of a toy manufacturing firm.

New laboratories to study use of Tenite butyrate and other plastics as overwrap materials and to investigate vacuum forming and fabrication techniques have been added to facilities of the plastics div. of **Eastman Chemical Products, Inc.**, sub. **Eastman Kodak Co.**, Kingsport, Tenn. Among the new equipment installed in the packaging laboratory are an extruder with high-speed film wind-up and auxiliary sheeting take-off, a cigarette overwrap machine and a blow-molding machine.

Two promotions have been made in the packaging-sales organization of **The Gardner Div., Diamond National Corp.**, New York. **Benson B. Martin** becomes mgr. of the Northeastern packaging-sales area, with headquarters in New York. **Stephen V. Gardner** becomes mgr. of the Southeastern packaging-sales area, with headquarters in Philadelphia.

Crompton & Knowles Packaging Corp., Holyoke, Mass., has enlarged its engineering dept. in a move to provide more complete service to customers and allow for a broadened development program. **Harland S. Fisher** has been named v.p. of engineering. Mr. Fisher worked in the field of machinery design and development at **E. I. du Pont de Nemours & Co.** and at **Johnson & Johnson.** His most recent post was that of chief engineer-product development with **Lily-Tulip Cup Corporation.**

Federico

Albert J. Federico has joined **Mecca Machinery Co.**, Long Island City, N. Y. As sales mgr., he will concentrate his efforts toward promotion of the company's line of laminators, coaters, rewinds and gravure printing units. During his former association with the **Champlain Co.**, he designed, developed and assisted in the production of that company's line of gravure and allied equipment.

Fibreboard Paper Products Corp., San Francisco, appoints **Leonard A. Carey** as mdsg. mgr. for distributor and non-food consumer packaging. He was formerly mgr. of sales administration for Fibreboard's Northern Packaging Div.

Henry C. L. Johnson has joined **Lippincott & Margulies, Inc.**, New York, as asst. to the pres. Mr. Johnson was formerly with an advtg. agency. **Joseph M. Murtha** has been named to the new post of v.p. in charge of account supervision by the design firm. He was formerly account manager.

The appointment of **Riley Upton** as v.p. of sales has been announced by **Multi-Pak Corp.**, Middletown, O. Mr. Upton was formerly with **The Gardner Div., Diamond National Corp.** Multi-Pak makes soft-drink bottle carriers.

Harry H. Ogden, former v.p. of **Mead Packaging, Inc.**, Atlanta, is now associated with **R. S. Kerr & Co.**, 957 W. Marietta St., Atlanta, Ga., as owner of the Georgia dealer-distributorship of **Yale & Towne** Industrial Lift Trucks.

The Mead Corp., Dayton, O., recently established its first foreign subsidiary. **Mead, S. A.**, has been formed to centralize the corporation's international

[*Continued on page 178*]

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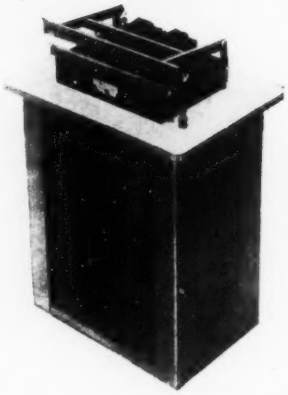

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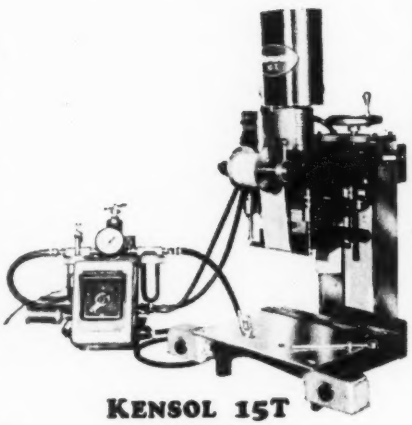

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Plants & People

[*Continued from page 175*]

operations. Headquarters will be in Zurich, Switzerland. **Harry R. Slack, IV**, will coordinate the new Mead enterprise, which will engage in sales and licensing activities and explore possibilities for overseas manufacture of some of the company's established products.

Bennett

Lily-Tulip Cup Corp., New York, has revamped its art dept., appointing **Ed Bennett** as corporate art director and establishing four regional art depts. throughout the country. By decentralizing art functions, according to the company, Lily-Tulip will be in a better position to speed and personalize customer service. Mr. Bennett was formerly art director for NBC-TV.

Roger L. Corbett has become a partner and exec. v.p. of **Osborn Charles Associates, Inc.**, package and graphic design, New York. Mr. Corbett was formerly associated with **Olin Mathieson Chemical Corp.**, where he held a variety of positions within the company's Packaging Division.

Two new officers have been appointed by the board of **Air Light Products Co.**, Omaha, Neb. **F. K. Crosby** is now pres. and treas. **Frederick A. Lamback** is chairman of the board. The company makes plastic food containers and other plastic products.

AviSun Corp., Marcus Hook, Pa., will build a polypropylene plant at New Castle, Del. The new facility will be adjacent to AviSun's film and fibre plants and will supply basic raw material for these two plants.

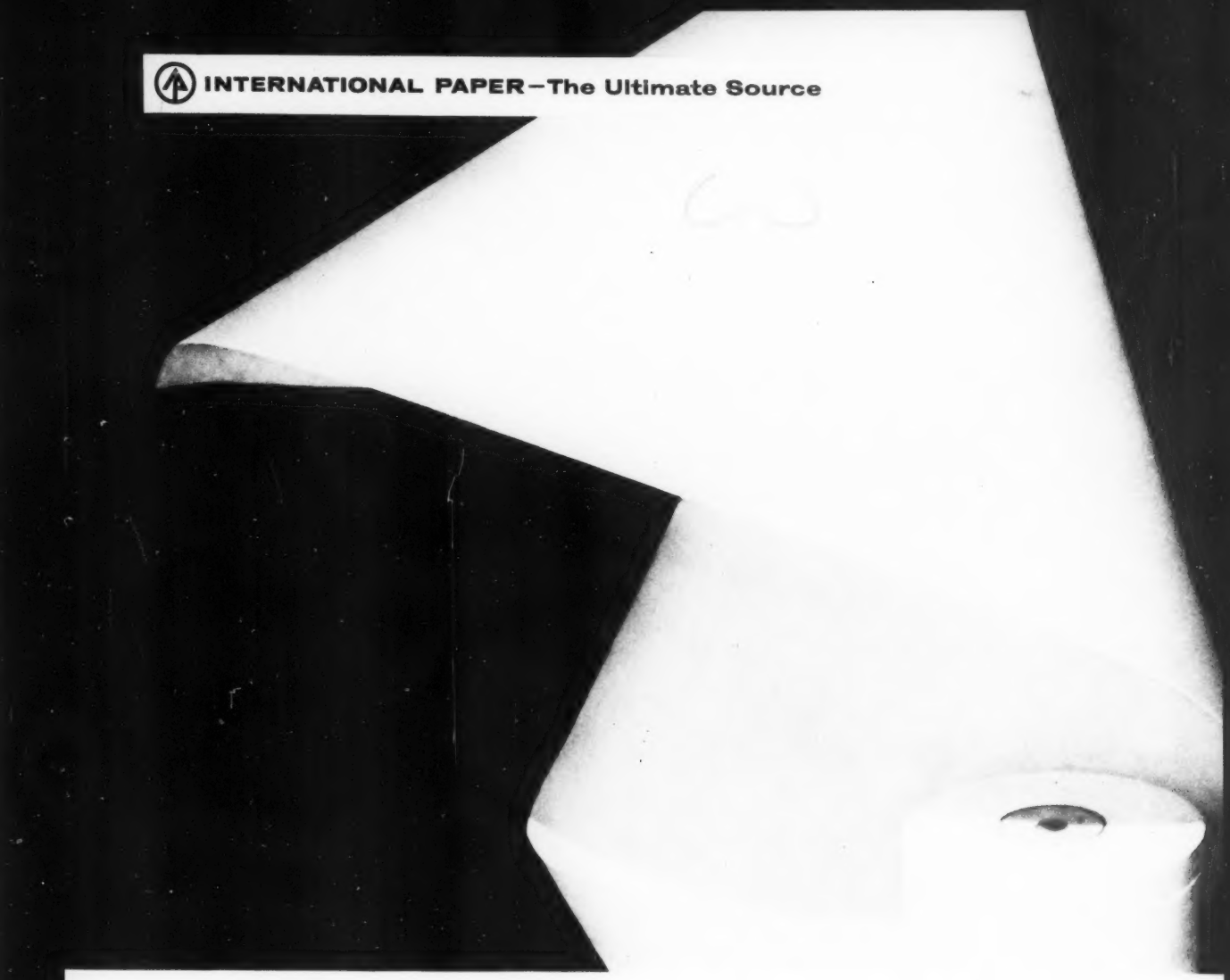
Dr. H. E. Robinson, **Swift & Co.** v.p. in charge of research laboratories, engineering research and equipment development, has assumed responsibility for a number of products-for-industry operations. He succeeds **E. A. Moss**, retired. Swift depts. now under Dr. Robinson, in addition to general and engineering research, include adhesives, gelatin, stabilizers, soap and chemicals, and the technical products plant at Hammond, Ind. Dr. Robinson joined the company research staff in 1932. He was elected v.p. of Swift in 1959.

Robinson

Weldotron Corp. is the new name of the former Plastic Welding Corp., Newark, N. J. The company makes high-frequency dielectric heating and thermal-impulse sealing equipment, among other items in the electronics field.

The Converting Div. of **Shore Line Industries, Inc.**, film-making sub. of Porteo Corp., has been purchased by **Webster Industries, Inc.** Shore Line's

INTERNATIONAL PAPER—The Ultimate Source



How to improve a 35-year-old paper

(More packaging news from International Paper)

Read about our Gator-Hide kraft paper line and new bleached Gator-Hide Extensible Kraft.

The reputation of Gator-Hide, the world's most widely used kraft paper, began when International Paper made its first roll of kraft paper in the South in 1925.

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One of the most valuable recent additions is *bleached* Gator-Hide Extensible Kraft. This paper provides built-in *stretch* for *extra strength*. It is ideal for industrial wrappings, multiwall bags and many other uses. Comes in white, black and natural color.

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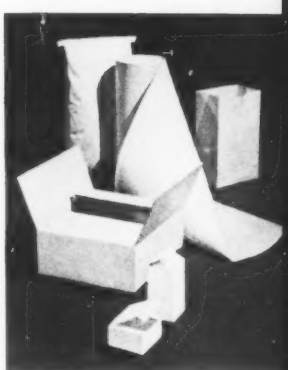
The future of Gator-Hide industrial papers is unlimited. Their versatility will contribute to the science of packaging for years to come.

International Paper can provide you with the widest range of papers, boards and packaging assistance in the industry. Call us or contact your converter—he's probably been doing business with us for years.



INTERNATIONAL PAPER New York 17, N. Y.

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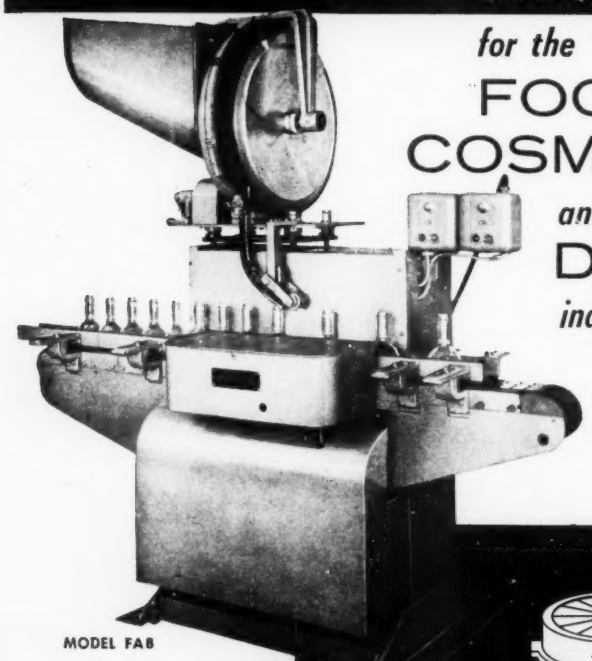
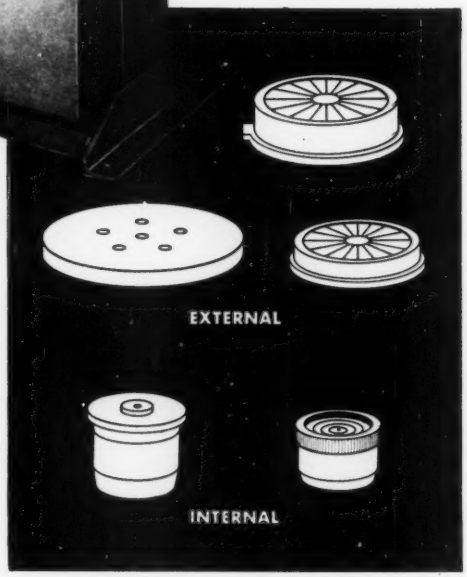


MODEL FA8



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converting equipment and accounts have been moved to Webster's Salem, Mass., plant. The new parent company extrudes and converts polyethylene.

First commercial-scale production of a new family of high-purity, light-stable epoxy compounds is under way at the Institute, W. Va., plant of **Union Carbide Chemicals Co.**, New York. The new unit produces Unox epoxides and Flexol epoxy plasticizers.

Service Paper Co. and **Addison-Semmes Corp.** have been acquired by **Signode Steel Strapping Co.** of Chicago, and are being operated as wholly owned subs. **Service Paper** is a paper distributor. **Addison-Semmes** produces industrial shipping containers.

Silver Creek Precision Corp., Silver Creek, N. Y., has acquired the **Multi-fill Machine Co.**, Toledo. Multi-fill Machine operates under the patents of the Donofrio family of Toledo, developers and builders of high-speed, filling machines for the food, drug, dairy and cosmetics industries.

Production of polycarbonate resins in commercial-scale quantities has been begun by **Mobay Products Co.**, a sub. of **Mobay Chemical Co.**, Pittsburgh. Market development work on a variety of applications for the tough, transparent thermoplastic is progressing.

A program designed to increase facilities for shipment of tin plate in coils has been put into operation by **Jones & Laughlin Steel Corp.**, Pittsburgh. A new coil-packaging line, heavy-duty tractors, truck-loading equipment and other improvements have been installed at the company's Aliquippa plant.

Construction is underway at Kingsport, Tenn., on new quarters for the sales-service and product-development laboratories of the Chemicals Div. of **Eastman Chemical Products, Inc.**, sub. **Eastman Kodak Co.** Completion is scheduled for early next year.

Crompton & Knowles Packaging Corp., Holyoke, Mass., has created a dept. for new-product planning on wrapping and packing machinery. **Thomas Cherbas** has been named mgr. of the department.

Continental Can Co., New York, plans to construct a metal-can manufacturing plant in St. Joseph, Mo., to be in operation by next summer. The company also has opened a fibre-drum manufacturing facility in Carteret, N. J.

Turex Plastics, Nasonville, R. I., has started producing polyethylene film for packaging of produce, textiles and other products. A wholly owned sub. of **Rexall Drug & Chemical Co.**, Turex is equipped to produce polyethylene or polypropylene film.

Reynolds Metals Co. reports plans to equip all its aluminum-foil-manufacturing facilities with ultrasonic seam-weld-

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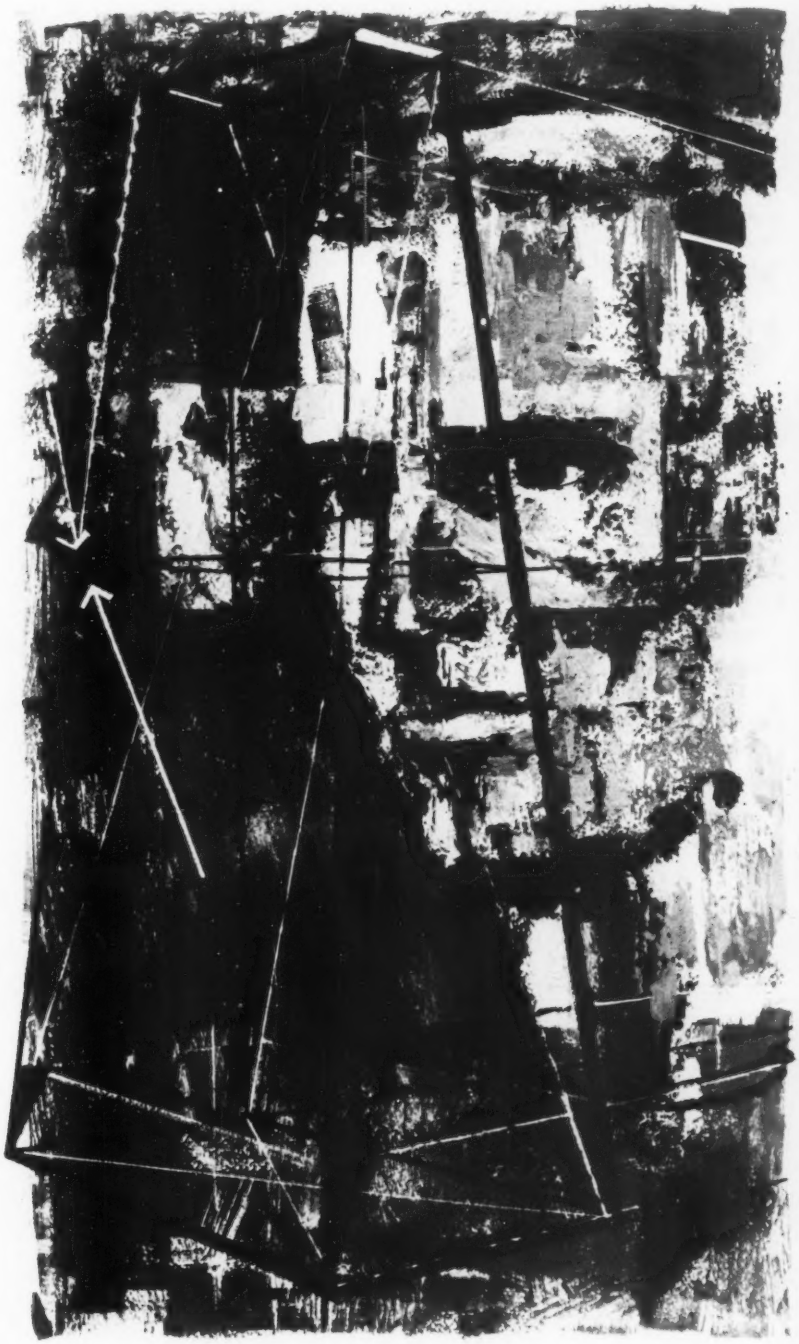

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THE GARDNER DIVISION

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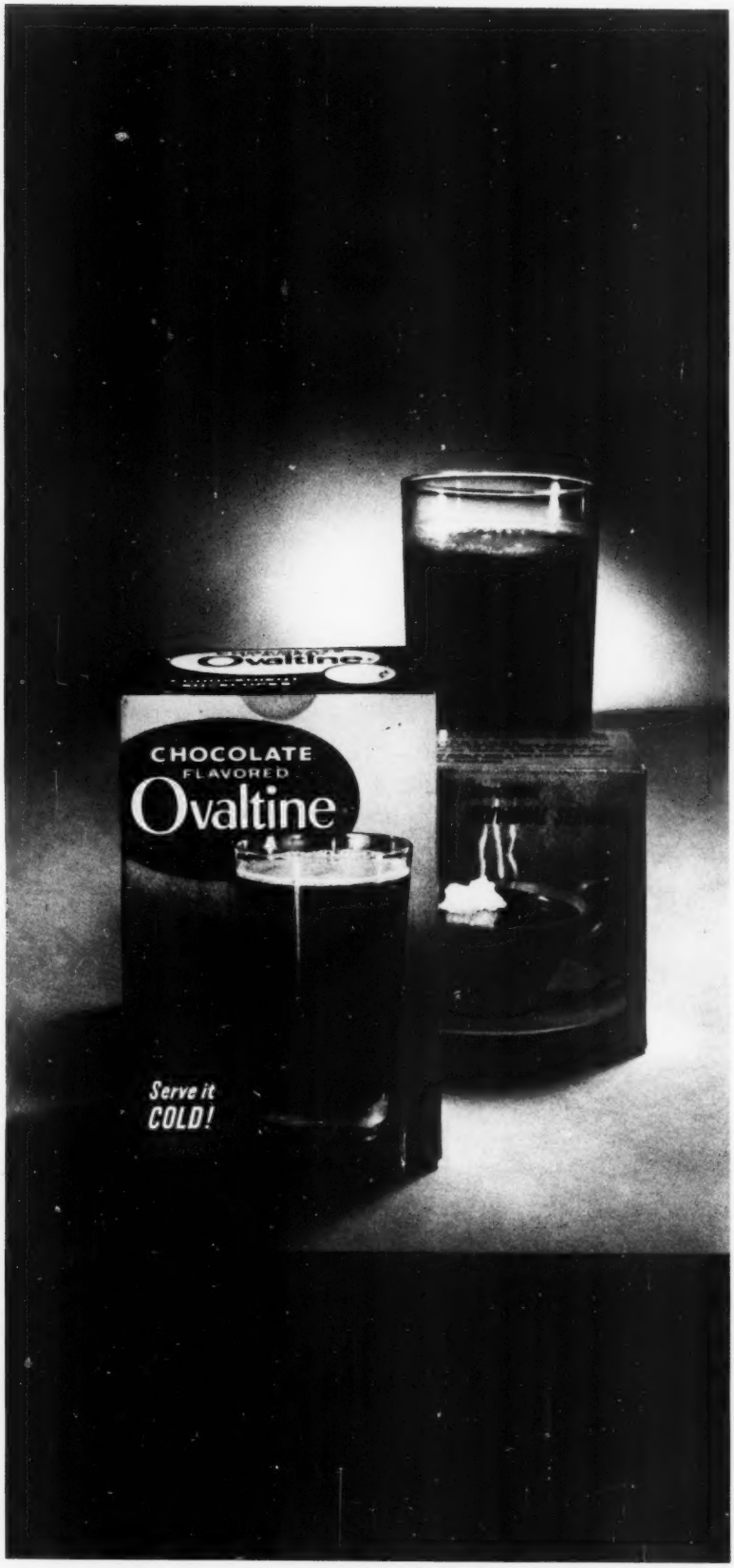
WORKING EXAMPLE OF PERSUASIVE PACKAGING



DIAMOND NATIONAL
THE GARDNER DIVISION

Plants & People *(Cont'd)*

ing equipment for increased production speeds and efficiency. A foil seam welder is on order from **International Ultrasonics, Inc.** The equipment is to be installed on foil-processing machinery to splice breaks.

C. A. Coutts & Co., Ltd., London, England, has acquired the business of **Richard Pye & Co., Ltd**, London, manufacturer of boxes and cartons. C. A. Coutts make wire-stitched folding boxes and containers. **Ernest F. Pye**, who headed the Richard Pye company for the past 25 years, has joined the Coutts firm.

Acquisition of an additional manufacturing plant adjacent to the Hartig Extruder factory in Mountainside, N. J., has been announced by the **Waldron-Hartig Div.** of **Midland-Ross Corp.** The new plant will be used for the manufacture of machines newly developed for the paper and plastics industries.

Assets and business of the **Nixon Nitration Works**, Nixon, N. J., have been purchased by **Nixon-Baldwin Chemicals, Inc.** Nixon-Baldwin Chemicals was formed by **Allen J. Baldwin**, former pres. of Nixon Nitration, and **George F. Blasius**, pres. of Cary Chemicals. Mr. Baldwin is pres. of the new corporation, which will make rigid vinyl, cellulose acetate, cellulose acetate butyrate, high-impact polystyrene, polyethylene, and cellulose nitrate sheeting.

Ludlow Corp., Needham Heights, Mass., has allotted $750,000 for expansion of its plastic plant in Homer, La. According to the company, additions to production facilities have been prompted by the increasing demand for cast films and plastic-coated packaging materials.

Leedpak, Inc., custom packager and supplier of paper, packaging materials and equipment, has moved to new quarters at 24 W. 58 St., New York.

Promotions

Vincent Gilpin, Jr.: to sales mgr., paperboard div., **Downingtown Paper Co.**, Downingtown, Pa. Mr. Gilpin, who succeeds the late **William J. Mahood**, was formerly mktg. research mgr. for the company's paperboard and packaging divisions.

Norman Donovan: to asst. to director of planning, **The Kordite Co., Div. National Distillers & Chemical Corp.**, Macedon, N. Y. Kordite makes plastics products.

Ralph T. K. Cornwell: to tech. asst. to the pres., **American Viscose Corp.**, Philadelphia. Dr. Cornwell, who will handle special project assignments, was director of research for the Film Div.

Paul A. Graf: to div. gen. mgr., Chicago and Solon, O., carton operations, **Container Corp. of America**, Chicago. **Henry F. Drnec**: to Chicago sales mgr., solid fibre operations. **John L. Phillips**: to mgr., bakery packaging, Western div.

Robert P. Barse: to sales mgr., Container Corp.'s Dallas-Fort Worth folding-carton plant.

Henry S. Winnicki: to v.p., Chemical Divisions, **Food Machinery & Chemical Corp.**, New York.

Ingvar Tornberg: to v.p., sales, **Essex Plastic Machinery Co.**, Beverly, Mass. **Wilbur Tracey**: to v.p., production

Herbert J. Virnig: to asst. sales mgr., Container Div., **Anaconda Aluminum Co.**, Louisville, Ky.

John J. Barile: to sales mgr., Cincinnati, **Plax Corp.**, Hartford. **Robert C. Rose** has taken over Mr. Barile's former duties as asst. sales mgr. in New York.

Leslie L. Chandler: to sales supv., Chicago, **Thatcher Glass Mfg. Co.**, New York. **Duane H. Lewis**: to sales supv., Louisville, Ky. **Roger G. Madigan**: to sales supv., Philadelphia. **G. L. Price**: to mgr., Philadelphia branch.

Appointments

Jack Peck: from **Allied Chemical Corp.** to **Plastics Service, Inc.**, mfg. div. of **M. Holland Co.**, Chicago. He will be in charge of the new polyethylene and polpropylene division.

James H. W. Conklin: from **Pratt & Whitney Co.** to gen. sales mgr., **Stanley Steel Strapping, div. The Stanley Works**, New Britain, Conn.

Charles H. Swan: from **Owens-Illinois Glass Co.** to Midwestern sales mgr., **Metro Glass Div., National Dairy Products Corp.**, Jersey City.

Obituaries

Samuel W. Menefee, Jr., mgr. of the packaging development and merchandising dept., Packaging Materials Div., **Armstrong Cork Co.**, died of a heart attack July 17 in Lancaster, Pa. He was 53 years old. Mr. Menefee's career with Armstrong spanned more than 20 years. He joined the company in 1938 as asst. mgr. of the Druggists Supply Section in the Philadelphia office. In 1940, he was transferred to company headquarters in Lancaster, where he developed what is now the package development and merchandising dept. Mr. Menefee also helped establish Armstrong's sales-training program for the Packaging Materials Div., and was in charge of the program for many years.

Menefee

Arthur W. Miller, pres. of **Cornell Paperboard Products Co.**, Milwaukee, died on June 24. Mr. Miller started his business career wtih Cornell 45 years ago and was to have retired this year.

Robert H. Askren, v.p. of **Raymond Loewy Associates, Inc.**, Chicago, died July 27 in a helicopter crash between Midway Airport and O'Hare International Airport in Chicago. He was 49.

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AUTOMATIC CARTONER

- *Handles delicate pies and cakes at speeds up to 70 per minute.*
- *Changeover from one size to another takes only twenty minutes.*

Here at relatively low cost is the perfect combination of speed and flexibility. With the product inserted manually, the Ceco Model 40 handles a glue seal end carton fully automatically from hoppering through sealing.

The Model 40 can also be had to handle heavy weight board or corrugated as well as tuck style, lock style or, a carton having one glue end and one tuck end. It is ideal for bagged products, bakery products, frozen foods, drug products, hardware, etc. For full details write for a 40 Brochure.

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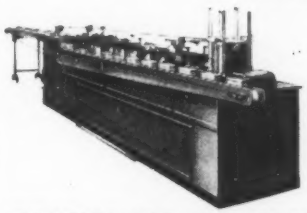

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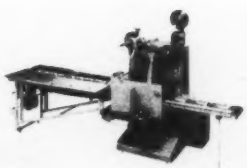
if you can hold it in your hand (and it is reasonably rectangular) • • •

Battle Creek Machines can probably wrap it better,

faster, more economically than any other.

This compact Model 152 Flexopaker pouch packages in heat sealable or cohesive papers Baked Goods; Automotive and Electrical Parts; Textile, Medicinal and Paper Products; Toiletries and Sundry items. It is adaptable for short runs of articles requiring quick changeover or longer runs requiring high production. Belt type intake floats fragile, sticky or loose products through sealing wheels at speeds of 15 to 80 per minute. Perforations between pouches, if desired, allow easy separation. Convenient handwheel varies pouch widths and lengths are altered mechanically within a range limit of 27" x 15" x 1" and 2" x 2" x 1/16".



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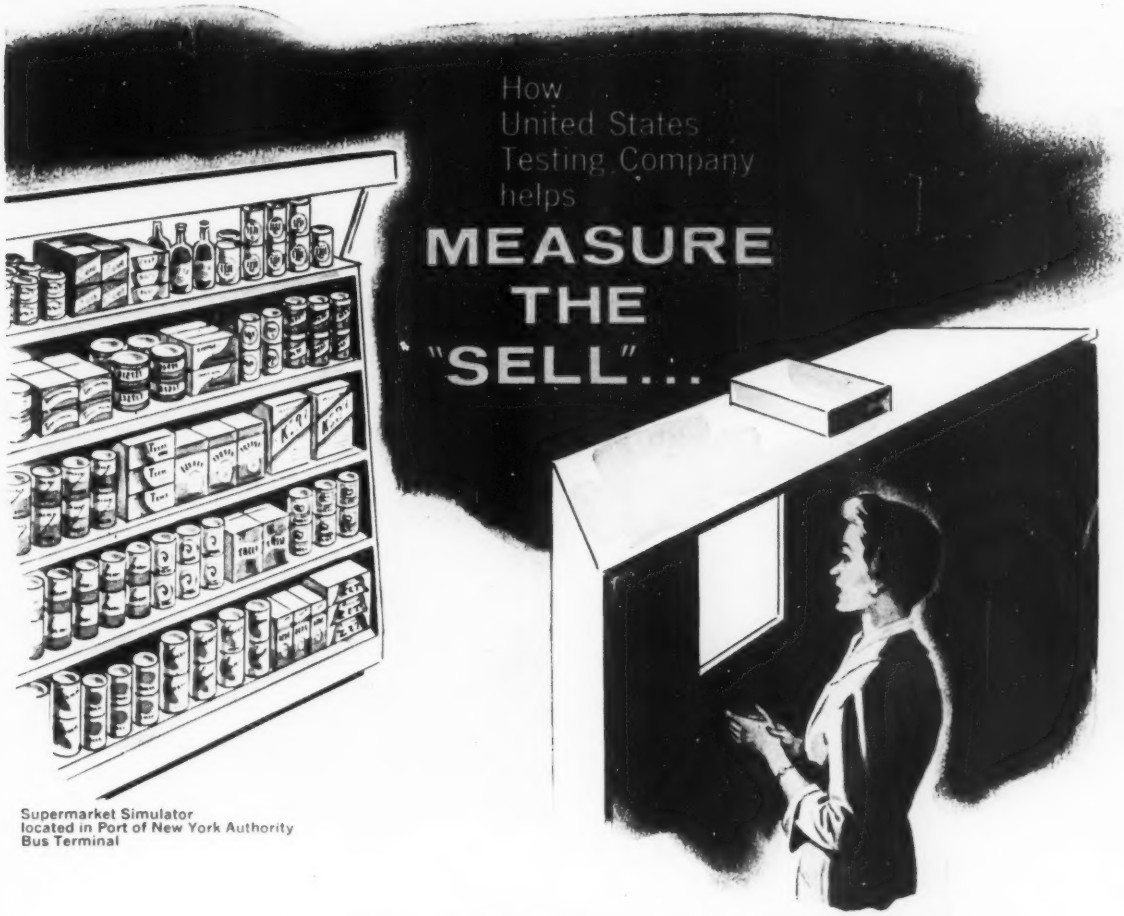
BATTLE CREEK *packaging machines, inc.*.. BATTLE CREEK, MICH



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18

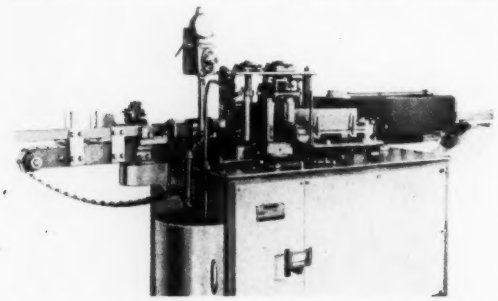
Equipment & Materials

[*Continued from page 56*]

heat flow and rapid cooling action. The sealers can be used with polyethylene, saran, vinyl and other packaging films. *Weldotron Corp., 841 Frelinghuysen Ave., Newark 12, N.J.*

Continuous-motion labeler

MRM offers an automatic, straight-line continuous-motion labeling machine for application where high-speed production is not a factor. The SL-85 is designed for integration into any conveyorized line running glass or metal containers



in a size range from 1 in. high by ¾-in. diameter to 14 in. high by 7-in. diameter. Round, flat, oval and tapered containers can be accommodated. Labeling speed of the machine ranges from 45 to 85 labels per minute, says the supplier. The label magazine has a capacity of 3,000 labels. Low cost, versatility and easy change-over are among the features cited by the manufacturer for the new variable-speed unit. *MRM Co., 191 Berry St., Brooklyn 11.*

Glossy white bag paper

"Snow White" is the name given by Arkell & Smiths to a newly developed clay-coated bag paper. According to the supplier, the paper is produced on an improved air-knife coating machine which makes possible exacting quality control of clay application to the sheet. Chief advantages cited for the white bag paper are excellent printability, greater strength, superior brightness and high gloss. The company reports that its method of applying clay coating to paper surface uses a controlled stream of air to replace the scrubbing action of brushes, thereby enabling the use of new coating formulas. The air-knife coating method, the supplier continues, does a better job of filling the natural porousness of paper and greatly reduces the inclination of paper to absorb inks. *Arkell & Smiths, Inc., Hudson Falls, N.Y.*

Compression tester plots data

L.A.B. Corp.'s new compression-testing machine features an integral recorder which automatically plots pressure and package deflection on a graph chart for a permanent record of each test. Designed to test shipping containers and other packages and packaging materials, the unit is suitable for large-volume or sample testing. A platen height adjustment permits change-over from maximum to minimum settings in seconds, says the supplier. Height adjustments are made in increments of 2 in. The platen can be locked parallel to platform surface or it can be pivoted to conform to the plane of the container top. Changes in the machine's compression speed are accomplished by a hand-wheel adjustment. The compression tester is available with three standard compression ratings: 2,000, 5,000 or 10,000 lbs., and three height load openings: 48, 60 or 72 in. Maximum width and depth load openings are 40 in., the manufacturer reports. *L.A.B. Corp., Skaneateles, N.Y.*

Speedy can-casing machine

A high-speed automatic machine for packing cans into top loading cases is available from A-B-C Packaging Machine. The unit achieves speeds of up to 1,200 cans per minute with positive automatic feed, says the firm. The machine also is claimed to eliminate down time and to require minimum maintenance. It can be equipped with an automatic feed for positioning reshipper cases or a magazine feed to open and feed knockdown flap cases to the packer. *A-B-C Packaging Machine Corp., Tarpon Springs, Fla.*

Larger 'purse-size' aerosol

A 13½cc stainless-steel inner container offered by Emson Research is claimed to permit packagers of aerosol perfumes, cosmetics and other pressure products to provide larger purse-size units at little or no increase in over-all package-manufacturing costs. Available with metered-valve assembly, the larger container is reported to be competitive in price with the standard 10cc unit. This size increase, says the supplier, permits as many as 125 more metered doses. For additional details, contact *Emson Research, Inc., 118 Burr Court, Bridgeport 5, Conn.*

High-density polyethylene resins

Two new high-density polyethylene formulations—the first of a planned linear-polyethylene series—are offered by Dow. To be marketed under the designations R600 and R800, the resins are designed for injection molding and for film applications in the manufacture of housewares, industrial containers, overwrap film, tape backing and other products. Density of the new resins (0.957) is reported to offer the optimum combination of properties and processability. Among the features cited for the resins are: 10 to 30% less shrinkage than other linear-polyethylene resins, good gloss and clarity in film form and excellent fabrication characteristics. *The Dow Chemical Co., Midland, Mich.*

Oil-resistant ink for polyethylene

Cor-Print is the name given by Continental Can's Flexible Packaging Div. to a newly developed oil-resistant ink system for polyethylene film. According to the supplier, the ink formulation enables products with a high percentage of vegetable-oil content (such as coconut) to be packaged in polyethylene film printed in as many as five colors. Formerly, the company notes, oily products could not be packaged in polyethylene film because of oil strikethrough which mixed with surface ink and caused it to rub off on adjacent packages or on shoppers' hands. The supplier reports that polyethylene bags decorated with the new ink formulation show no deterioration under normal storage conditions in spite of high shortening or vegetable-oil content of the product. Additional data on the system are offered by *Continental Can Co., Flexible Packaging Div., Mt. Vernon, O.*

Aerosol-container caliper

A modified design of the Vernier Caliper, offered as a precision measuring instrument for the aerosol industry, now is available from DeGray Design. The instrument provides micrometric measurement of all essential parts of the container and valve. It also can be used to measure machine and crimping-tool settings. Manufactured of hardened stainless steel, the tool is claimed to achieve accurate measure-

puts "touché"

in *flexible* packaging!

The fencer who scores first is credited with a "touché". Oneida-designed packages have the dynamic visual quality that reaches out and scores *first* with shoppers.

Oneida can produce just such a package for *you* . . . in the flexible material that's *right* for your product. The services of an imaginative design staff are at your command . . . and four plants with the most modern production machines, including 6-color flexographic, rotogravure and letterpress equipment are strategically located to serve all industry's flexible packaging needs.

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whatever your product . . .

flexible packaging by Oneida

will surround it with **SELL!**

ment down to 0.001 in. Additional information can be had from *DeGray Design, Inc., West Palm Beach, Fla.*

Label imprinter and rewinder

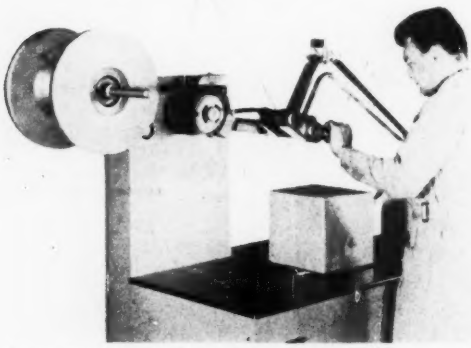
Now available from Oliver Machinery is the 900 Imprinter-Rewinder, a label imprinter which makes use of a constant-source ink-supply pot. A rotary-feed print segment carries the rubber imprinting logotype and also feeds the label. The unit is said to operate at speeds up to 200 labels per minute. Label size capacity is $1\frac{1}{4}$ in. by 1 in. to 3 in. by 5 in. If individual labels are desired for manual application, a cut-stack feature is available as optional equipment. On the new, self-contained unit, labels can be imprinted and re-wound back into rolls for future use on automatic labeling machinery. *Oliver Machinery Co., Grand Rapids, Mich.*

New plastic-container label

National Laminating Sales Co. is a new company, formed to market a multicolor, pressure-sensitive permanent label for plastic containers. Called Lok-in Label, it utilizes a cold-seal process which reportedly makes possible its application to rigid or flexible plastic containers either manually or on high-speed automatic equipment. In the labeling process, a printed, acetate-faced image is suspended in a special adhesive which is claimed to seal the printed copy from any harmful outside influence. The label thus applied, says the company, is a permanent part of the container that cannot be soaked off or removed by acids, alkalies or solvents. Further information is available from *National Laminating Sales Co., 1263 Westwood Blvd., Los Angeles 24.*

Automatic binding with rayon strap

The Model 3201-18 Autobinder is a new strapping machine which automatically applies, tensions and seals rayon strap on variable-size packages. The unit is offered by Fiber Straps, a corporation jointly formed by Chicago Printed



String Co. and A. J. Gerrard & Co. The machine reportedly can band up to 15 packages per minute with a $\frac{3}{16}$-in.-wide rayon strap. It automatically adjusts to package sizes ranging from 6 in. high by 2 in. wide by 8 in. long to 18 in. high by 36 in. wide by any length. A control knob adjusts tying tension, so the machine can accommodate compressible bundles or rigid cartons. Strapping is dispensed from a spool containing 5,000 yds. of the material. *Fiber Straps, Inc., Des Plaines, Ill.*

F&DA-approved paper coating

Dow Corning reports that a recent Food & Drug Administration ruling establishes the permissibility of packaging food products in paper coated with Syl-off 1107 emulsion, a silicone material. The F&DA ruling states that there is no reasonable expectation of migration of components from the substance, which "is not a food additive for the described conditions of use." Details on the material are offered by *Dow Corning Corp., Midland, Mich.*

Lightweight half-gallon bottle

Now available from W. Braun Co. is a lightweight, non-returnable glass bottle in half-gallon size. The new container is suggested for use in the packaging of distilled water, fruit juices or other liquid products. It can be re-used as a refrigerator storage bottle. According to the supplier, the bottle's attributes of light weight, compactness and the non-returnable feature will help increase sales for packagers of liquid items. The narrow-necked glass container has an easy-to-remove, easy-to-replace screw cap. For esthetic appeal, the broad-based bottle is rounded slightly at the bottom. Decorative, blown-in swirled ribbing at the base and shoulder of the bottle adds to its eye appeal, says the manufacturer. The supplier reports also that it is planning the development of a convenient, easily attachable handle to be marketed with the bottle as a premium item. Additional data on the new lightweight bottle are available from the supplier. *W. Braun Co., 300 N. Canal St., Chicago 6.*

Heavy-duty sealing tape

An extra-heavy-duty reinforced sealing tape is being marketed by Atlantic Gummed Paper under the trade name, Extra Heavy A-3 Padlock. It is designed for such severe packaging applications as closing boxes containing unusually heavy loads. It is suggested for operations involving higher test grades of double-wall and triple-wall corrugated shipping containers, says the company. *Atlantic Gummed Paper Corp., 1 Main St., Brooklyn 1.*

Film resins for drum-liner use

Two new polyethylene-film resins, designed primarily for extrusion into drum-lining material, are offered by Spencer Chemical. The resins are designated Poly-Eth 2115 and Poly-Eth 2175. They are claimed to produce film with the high impact strength and heat-sealability which are prime requisites of drum liners. More than 500,000 lbs. of the resins have been field tested and found to produce film combining superior strength and clarity, says the supplier. Characteristics of the film, says the firm, suggest its use in other packaging applications. The company reports that its development of polyethylene resins was the result of a study which indicates that up to 13 million pounds of resin per year are used to make drum liners. *Spencer Chemical Co., Dwight Bldg., Kansas City 5, Mo.*

Power pack for plastics fusion

A variable-frequency power pack for the fusion of plastics has been introduced by Gregory Blessing Associates. The Model 31A Intratherm incorporates a pulse integrator which, in combination with the variable-frequency feature, is claimed to permit faster cycling without electrode flash-over and imperfect welds. The compact new unit, which weighs about 30 lbs., also is said to offer simplified control, easy maintenance and direct coupling, as well as to eliminate radiation problems. Further information on the power pack can be obtained from the supplier. *Gregory Blessing Associates, Solana Beach, Calif.*

Forced-air heating equipment

Now being offered for such applications as the drying of printing inks on flexible packaging materials is Jet Heat's forced-air heating system. The Jet-Heet furnace develops positive pressure in the combustion space, so it can be installed without a chimney. A vent pipe can be substituted. Directable heat is developed by a burner that delivers high-

GILMAN

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Unbleached Long Fiber Kraft PULP

Bleached Sulphate BOARD

Bleached and Unbleached Kraft PAPER

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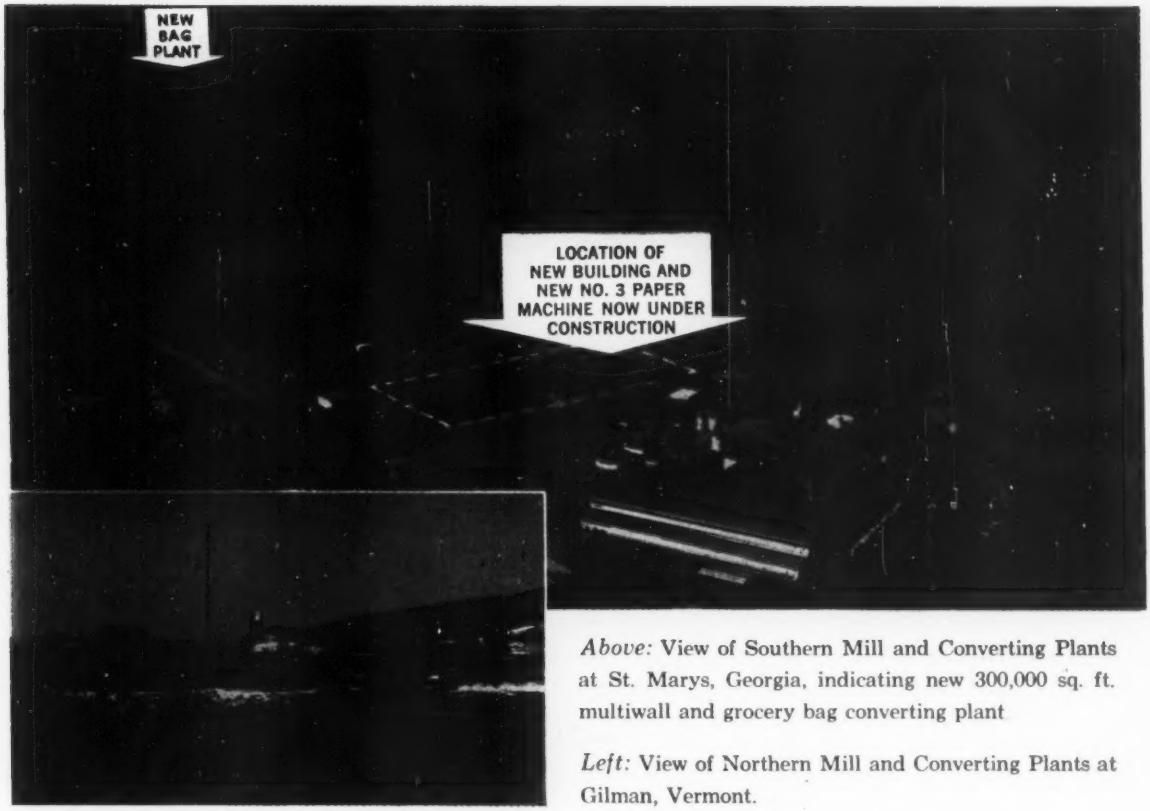


Above: View of Southern Mill and Converting Plants at St. Marys, Georgia, indicating new 300,000 sq. ft. multiwall and grocery bag converting plant

Left: View of Northern Mill and Converting Plants at Gilman, Vermont.

Subsidiaries:
ST. MARYS KRAFT CORPORATION
KRAFT BAG CORPORATION
CELLUCORD CORPORATION

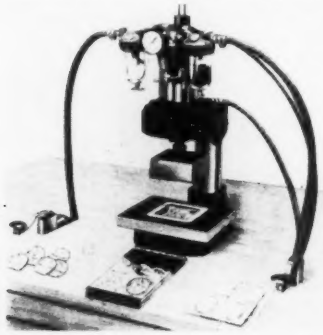
GILMAN PAPER COMPANY

Sales Offices: International Building, 630 Fifth Avenue
Rockefeller Center, New York 20, N. Y.

temperature gaseous products to narrow passages in a high-velocity heat exchanger. Details on the unit, said to be quiet in action, are offered by *Jet Heat, Inc., Englewood, N.J.*

Air press for stick-on blisters

An automatic air press for mass production of blister packages using the recently developed method of pressure-sensitive adhesion to the hang card (see "Stick-On Blister," MODERN PACKAGING, May, 1960, p. 88) has been developed by Jackmeyer. In addition, says the supplier, the new unit will blister package any type, size and shape of product. Because the device operates without heat and high pressure (pressure-sensitive adhesive is precoated on the back of the blister's flange) the air press reportedly cannot curl, warp or bend the backing card, nor can it harm the packaged item. The unit runs on 5 to 10 lbs. of pressure, so that delicate or sensitive products can be packaged safely, says the company. The air press is geared to produce one complete seal per second. After blister and product are placed in the machine's jig, a card is placed over the blister. Pressure then is actuated by the operator depressing two levers. Two-hand operation is a safety measure to prevent operator accidents, the supplier notes. Timing of the machine can be regulated as desired. *Jackmeyer Corp., 353 W. 26 St., New York 1.*



Vertical container conveyor

A vertical, motorized conveyor for elevating filled shipping containers to upper-level shipping and storage rooms is being marketed by Standard Conveyor. Called the Escaveyor, the new machine is designed for positioning in line with standard horizontal conveyors. Featuring automatic loading and unloading, it is claimed to occupy less floor space than conventional straight-lift conveyors. The unit is suggested for use in areas where lack of space prohibits installation of inclined conveyors. It can be used for up service, down service or up-and-down service. *Standard Conveyor Co., 315 N.W. Second St., No. St. Paul 9.*

Adaptable automatic scale

The Merco-Weigh is Mercury Heat Sealing's new automatic scale, designed for use singly or in multiple in conjunction with automatic packaging operations. Weighing capacity of the unit is 5 lbs., with accuracy within $\frac{1}{64}$ oz., says the supplier. The steel-and-aluminum scale can be adapted to practically any automatic conveyor line for weighing and packaging a variety of products, according to the company. It is said to require minimum maintenance. Details are offered by *Mercury Heat Sealing Equipment Co., 2601-21 N. Howard St., Philadelphia 33.*

Extrusion-coating formulation

Eastman Chemical has developed a polyethylene formulation especially designed to produce thin extrusion coatings on paper and other substrates. Designated Tenite polyethylene 895, it is available in natural form or in color. It is reported to have excellent adhesion to kraft and other porous and nonporous papers, to cellophane and to other materials. The extru-ion-coating formulation has a melt index of 3.5 and a density of 0.921; minimum sealing temperature is about 270 deg. F. Pin-hole-free coatings can be achieved at weights as low as 7.5 lbs. per ream (about $\frac{1}{2}$ mil), with moderate neck-in and no edge variation, says the supplier. Uniform drawdown properties of the formulation are said to permit serviceable coatings as thin as 3 lbs. per ream. *Eastman Chemical Products, sub. Eastman Kodak Co., Kingsport, Tenn.*

Reinforced paper strapping tape

Arno Adhesive's C-470 reinforced creped-paper strapping tape reportedly has been designed to serve a wide variety of packaging and bundling purposes requiring extraordinary holding strength. The material is reinforced with glass filaments and has a pressure-sensitive adhesive backing. The tape is claimed to have an impact strength of 50 inch-pounds and tensile strength of 240 lbs. per inch width. It can be used for carton sealing, for palletizing and bundling. *Arno Adhesive Tapes, Inc., Michigan City, Ind.*

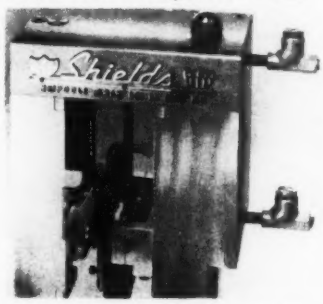
Polyethylene overwrap-film resin

A polyethylene film-grade resin which is claimed to produce a cast film of exceptional clarity, high gloss and stiffness, is available from U.S.I. The resin, called Petrothene 218, has a density of 0.933 and a melt index of 3.0. Film made from the resin has a soft feel. It is suggested for use in the overwrapping of soft goods, baked goods, meats, hardware, candy, paper products and other items. The film's stiffness is said to facilitate handling on overwrap machinery. The resin also is available in medium and medium-low slip formulations. *U. S. Industrial Chemicals Co., Div. National Distillers & Chemical Corp., 99 Park Ave., New York 16.*

Box maker has air-driven stitching heads

Built to produce shallow trays of corrugated board, Saranac Machine's new Model PD box-forming and stitching machine also can be adapted to construct many types of paperboard and fibreboard containers. In operation, blanks fed into the machine actuate a vertically positioned air cylinder, which brings a blank former downward into operation. As blanks are formed, four pneumatically driven stitching heads simultaneously stitch the box corners. The finished tray then is discharged. Each stitching head is a self-contained unit that cuts, forms and drives staples directly from a spool. Position of each head is adjustable; changing the forming element permits the stitching of boxes of various sizes and shapes. *Saranac Machine Co., Benton Harbor, Mich.*

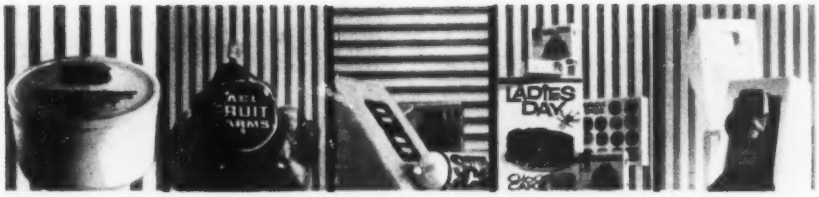
Coder for collapsible tubes



Ampoule Machine, manufacturer of equipment for the production of disposable cartridges and hypodermics, has developed a coder printer attachment that will code, date or imprint other data on collapsible tubes. Design of the supplier's new Shields unit reportedly enables it to be attached to any machine at any stage of tube processing, whether filling, closing or conveying. Speed of the attachment can be coordinated with that of other equipment in the production line, according to the company. Details are offered by *Ampoule Machine Co., 38-09 24 St., Long Island City 1.*

Versatile vacuum-forming unit

Plast-O-Craft reports that its Model 300A vacuum-forming machine is adaptable to both short-run and long-run blister-packaging operations. The low-cost unit can be sheet-fed or roll-fed. It comes complete with all controls, heater and power vacuum pump, and it can accommodate polyethylene, [*Continued on page 198*]



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From Dow comes a wide range of thermoplastic formulations in the industry for packaging applications unlimited. To name a few: Dow Polyethylene, Trycite, Saran Wrap, Polyfilm, Styron, Ethocel, Pelaspan, Styrofoam, Latex coatings, Saran resins. Today's package engineer looks to Dow not only for the right material, but for the technical assistance that can help him make the most of it.

These pages illustrate a few of the many packaging materials and ideas . . . *creative* ideas in new materials and in new ways with established materials. Check these pages for a clue to creating a better package for your product . . . then check with Dow, your most complete source of supply. Write to The Dow Chemical Company, Midland, Michigan, Plastics Packaging Service 1730.

THE DOW CHEMICAL COMPANY, MIDLAND, MICHIGAN DOW ®

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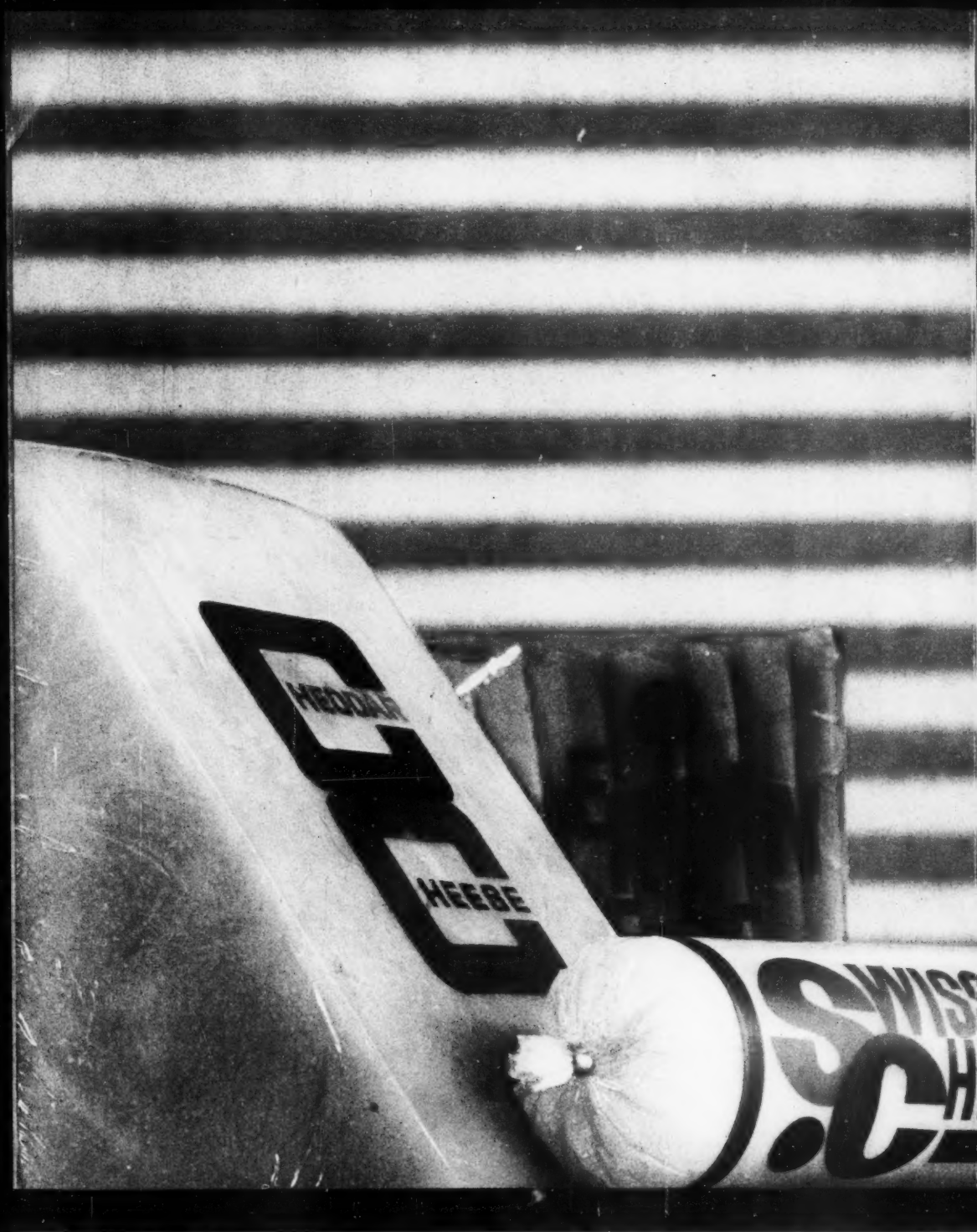
One of the most versatile of all packaging films, Dow polyethylene film is uniform, clear and strong . . . making bags easier to handle, more attractive . . . and making sales for a long list of items at the produce counter. Polyfilm® comes in formulations offering exceptional clarity, impact resistance and tear strength. Polyfilm may also be treated for optimum printing and heat sealing qualities, can be formulated with slip additives and anti-block additives for improved workability. Whether you want to package radishes or ready-to-wear . . . or anything in between . . . you can count on extra functional efficiency, extra sales appeal in packages made of Polyfilm.

STYRON

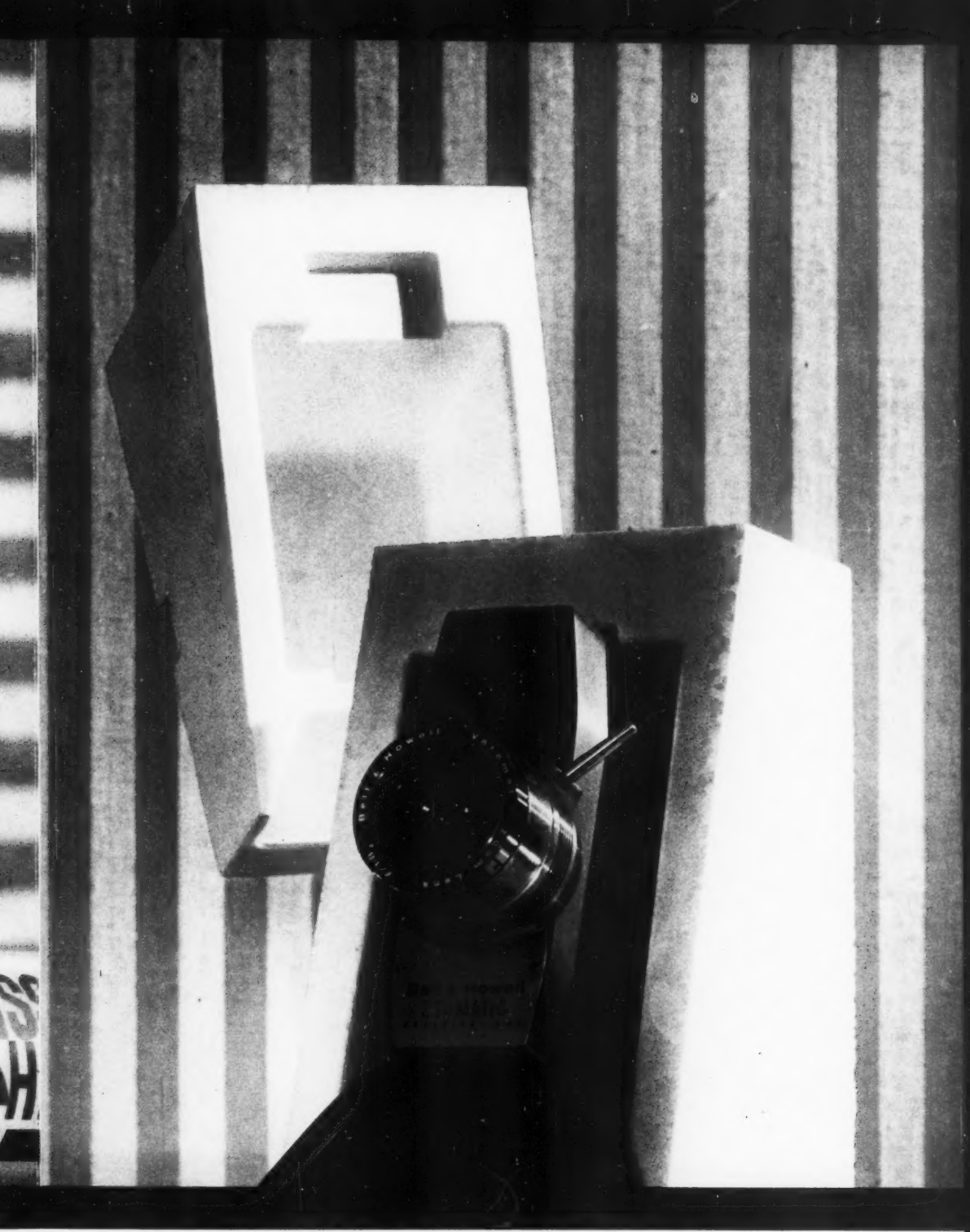
In the field of rigid packaging, Styron®, Dow's polystyrene, is an outstanding material for functional and quality packaging. The clear, sherbet-selling packages are injection-molded of Styron. Thin-wall construction now offers new economy and new opportunities for competitive packaging. Range of Styron formulations give the "rigid packager" a choice of crystal-clear or opaque in decorator-styled colors . . . in formulations for molding, extrusion, or thermo-forming. Important plus for food packagers: Many Styron formulations within the Dow family of plastics fully comply with the requirements of the Food Additive Amendment, for use in food packaging. For specific applications and products see your Dow plastics representative.



SARAN WRAP

Crystal clear, sparkling Saran Wrap* adds new appeal to any product, but has special advantages for foods such as cheese. Wrapped in heat sealable Saran Wrap, the wedges, sticks, chubs, half-moons and squares take on a new surface sheen that adds "sell." This quality protective film has excellent printed appearance with both surface and "trapped" printing. The excellent moisture and vapor barrier properties of Saran Wrap lock flavor in. Satin-soft, pliable Saran Wrap won't cloud or become brittle. It retains its protective qualities indefinitely, giving extended shelf life.

*TRADEMARK



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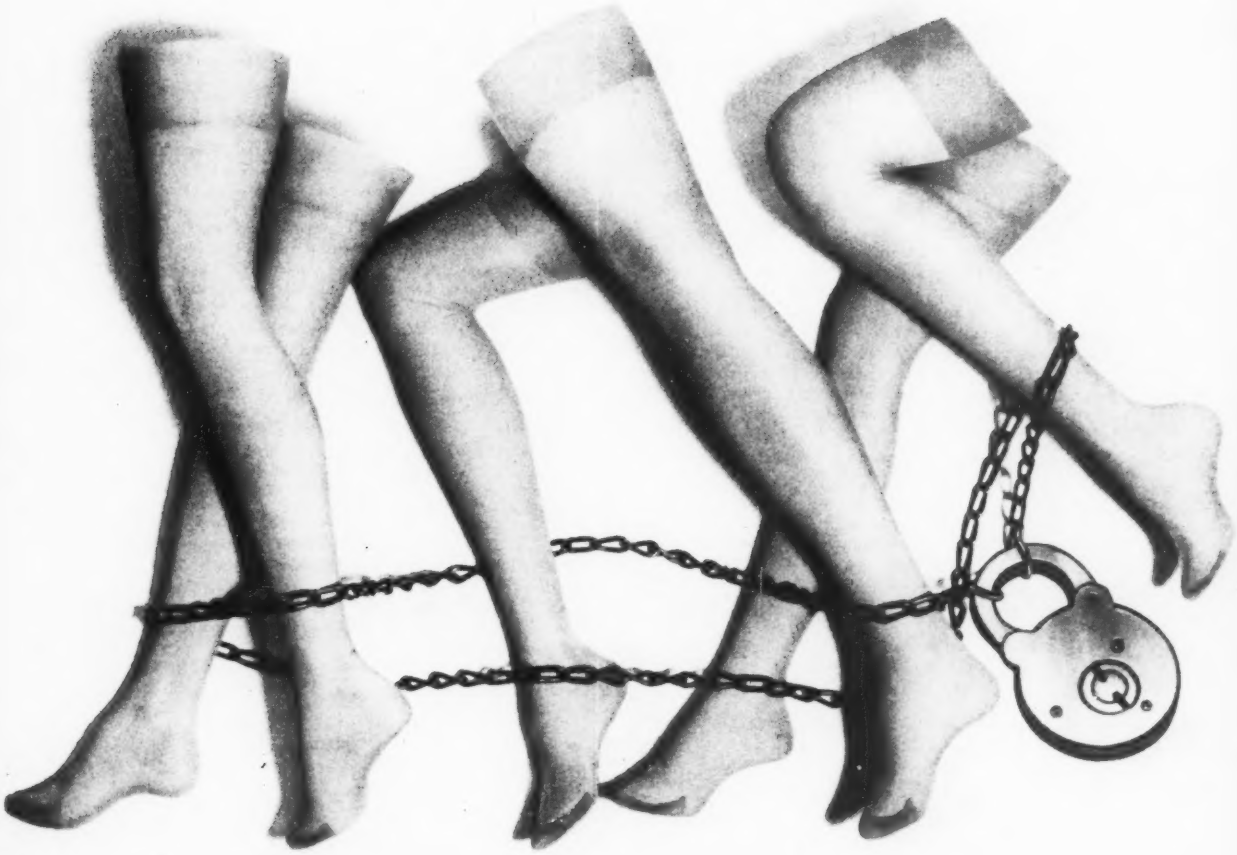
Pelaspan® offers a shock-resistant cradle that cushions without rebound – custom tailored to fit the contours of delicate products that call for extra protection in handling and shipping. Pelaspan, when molded, is rigid, light in weight, highly resistant to impact. It offers low thermal conductivity, good chemical resistance, low vapor transmission, high strength-to-weight ratio, no odor. When Pelaspan is injection molded, a high density molding with smooth surfaces can be achieved with wood grain and texture effects . . . and the decorative packages become attractive display units. For shock resistant packaging, Dow can supply the just-right materials in Pelaspan, Styrofoam® or Dow polyethylene foam.

LATEX

Coatings with Dow Latex are giving boxboard its bright new sales appeal. Colors are clearer and truer, printing is sharper . . . because Dow Latex in the coating means superior printability, improved gloss and a new, over-all look of quality. Dow Latex 630 adds superior pick resistance, excellent mechanical stability and starch compatability. Full-color food illustrations, ordinarily hard to reproduce, come clear and clean and true to life. And Dow Latexes give the boxboard manufacturer higher coating weights, quicker drying, and far broader range of packaging applications . . . as well as coatings that fold easily and have high resistance to cracking.



Stockings don't walk away...when "pilfer-proof" wrapped by Scandia

Retailers welcome the security of Scandia's unique method of folding and sealing cellophane overwraps on hosiery boxes.

There are no "peelable" underlap folds that make it easy for shoplifters to open the wrap and remove the contents.

You save on cellophane cost because Scandia wrapping uses 30% less material.

Send us a sample of your package today.

Learn how Scandia can help you save with better, *safer* packaging. Also ask about Scandia's Rental Program, the economical way to test better packaging techniques.

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SCANDIA

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polystyrene, acetate, butyrate and other materials. Plate size is 15 by 20 in. Change-over from one mold to another is said to take only a few minutes. According to the supplier, the new machine can be operated by unskilled personnel. *Plast-O-Craft Co., 503 McCarter Highway, Newark, N.J.*

Two new marking machines

Two new marking machines in the Rejafix series, adaptable for integration on existing packaging lines, are being marketed by Popper & Sons. The supplier's Model 555-H is an automatic rotary imprinter for marking data on cylindrical containers up to 1¼-in. diameter. The unit is capable of speeds up to 10,000 imprints per hour, the company reports. Also available is the Model E1/T automatic can imprinter. At reported speeds up to 1,500 per hour, it imprints codes, color shades and other data on lithographed metal cans. The device assures precise print registration, says the manufacturer. Cans of up to 4½-in. diameter can be accommodated. *Popper & Sons, Inc., 300 Fourth Ave., New York 10.*

Improved ultrasonic seam welder

International Ultrasonics reports the development of a self-tuning ultrasonic seam welder for aluminum foil and other thin metals, which can be applied in a system with one generator serving several welding heads. The Inson seam welder, as it is called, is shown installed on foil-processing

equipment. It reportedly joins broken web ends with a clean, electrically conductive joint thin and strong enough to run at full speed through laminating and printing equipment. The device is available with traversing or stationary head (the latter for package sealing or other operations along a continuously moving web). *International Ultrasonics, Inc., Rahway, N.J.*

Polyethylene-coated papers

Champion Paper & Fibre reports the development of a new line of polyethylene-coated papers. According to the supplier, the coated papers offer superior printing qualities and can be glued with standard adhesives. To be marketed under the PKG trade name, the packaging material also is claimed to bend, fold and score well, and to have a surface that does not change with time either before or after printing. The supplier says that the papers offer a reliable barrier to grease, water, acids and alkalies. Commercial production is scheduled to begin this month at a new plant which will be operated by the company's Carolina Div. Additional information on the new line of plastic-coated papers is offered by *The Champion Paper & Fibre Co., Hamilton, O.*

Pouch imprinting above the seal

Filled pouch packages moving on a conveyor belt through a band sealer can be imprinted with control data or decorative designs above the heat seal by Superior Roll Leaf's Superior Model 100 imprinting attachment. The device reportedly can be integrated into any pouch-packaging line. It is electrically operated. No operator attention is required except for replacement of expired rolls of transfer tape from which imprints are made, says the supplier. Roll leaf for use on the machine is available in various colors from the manufacturer. *Superior Roll Leaf Mfg., Inc., 1 Newark St., Hoboken, N.J.*

Multiwall-bag sewing attachment

A new sewing attachment which is reported to simplify and speed the closure of multiwall paper shipping bags has been developed by Bemis. The company's Sew-Rite attachment, which is mounted on the sewing pedestal, permits the bag to adjust itself before engaging the sewing machine. This action, says the supplier, saves operator time by carrying the bag directly to the sewing machine and also reduces thread and needle breakage caused by improper bag handling. In machine operation, the operator merely guides the bag into co-acting V-belts on the attachment. From that point, the bag is automatically fed into the sewing machine for automatic closure. This operation frees the worker's hands for positioning of the next bag. According to the supplier, the attachment effects a neat and secure closure, and allows an inexperienced operator to obtain high efficiency on the packaging line. Details are available from *Bemis Bro. Bag Co., 111-H N. Fourth St., St. Louis 2.*

Resin for coating applications

Resin D-566 is Shawinigan's newly developed plasticized dispersion of a high-viscosity polyvinyl-butyral resin. It reportedly is applicable wherever a low-tack, abrasion-resistant, high-strength film with high adhesion is required. According to the supplier, it can also be combined with water-soluble or water-dispersible thermosetting resins. Suggested areas of application include decorative and protective coatings for metal, glass and other materials; textile finishing, and greaseproof or washable coatings for paper. Upon drying at high temperature, the resin is said to produce thermoplastic film having high adhesion to porous and non-porous surfaces. The film is claimed to be non-tacky, strippable, continuous and water resistant. *Shawinigan Resins Corp., Springfield, Mass.*

Small-parts packaging machine

A new semi-automatic packaging machine for small parts, embodying automatic feeding and counting devices, is being marketed by Aidlin Automation. Offered as part of the machine is a bagging attachment which is designed to speed up the packaging operation. The leading bag (paper or plastic) in the stack is held open by air directed from a small built-in blower system. As one filled bag is removed by the operator, the next one comes into position, with the top open for the deposit of product. Machine cycle is adjustable, says the company. *Aidlin Automation, Inc., 1613 E. New York Ave., Brooklyn 12.*

Embossing facilities offered

Pamarco enters the embossing-roll field via an affiliation with Keller-Dorian Graveur, of Lyon, France. Under terms of the agreement, Pamarco acquires rights to the European firm's embossing patterns, as well as dies and specialized machinery and equipment to operate as a manufacturing counterpart of Keller-Dorian in the U.S. Pamarco also will offer for domestic use the entire future output of its overseas engraving affiliate. *Pamarco, Inc., Roselle, N.J.*

Roll-leaf color-code dater

A new code-dating attachment which uses heat, roll leaf and convex type is being marketed by Ackerman-Gould. According to the supplier, the device can be installed on any packaging machine that has one rotating shaft and one rubber pressure roll. The attachment consists of two assembled units: a bracket that supports, guides and rewinds colored marking foil; and an electrically heated, thermostatically controlled roll for holding interchangeable type. Using the rubber pressure roll, heated type presses

[*Continued on page 202*]

SETTING THE STAGE FOR SALES. CCA's Display Division applies its integrated forces of imaginative structural and graphic design, color and market research to displays that give your product an **extra dimension** at point-of-sale. Dominating three-dimensional spectaculars, display-shippers, counter displays, shelf extenders and paperboard premiums are among these sales-producing aids. To **pack it—move it—sell it** is the business of CCA packaging.

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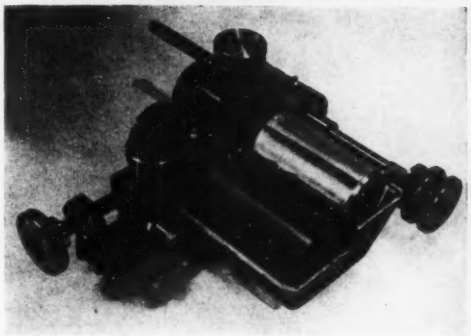
FLEXOGRAPHIC EDGE PRINTER



One (1) color, 4-Inch Edge Printer designed to meet the most exacting specifications. This miniature press, a compact unit, will fill all requirements of edge printing. Precision engineered, ingeniously designed, it features an ink fountain, a two-piece casting that is non-splash and leakproof. Built to operate in conjunction with other equipment, the simplicity of the Manhasset Edge Printer assures trouble-free, superlative performance, ease of operation, high quality printing. Many now in use here—and abroad. Re-orders attest to their success. Moderately priced, available on short order. Send for our brochure on all types of Flexographic Printers and Bag Machines which we tailor to your particular needs.

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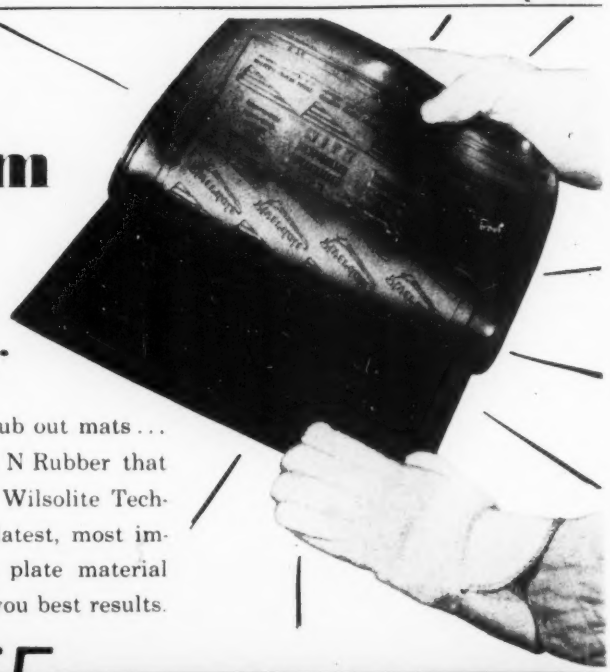

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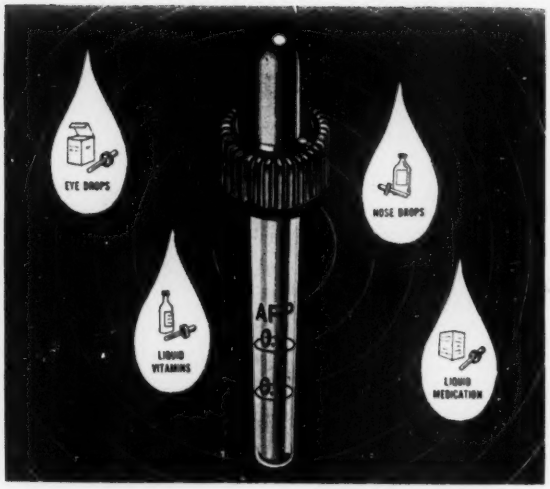
Custom Compounders of Polyethylene Molding Powder and other Thermoplastic Materials

Manufacturer and Developers of Unicolor and Formacolor *Pliothene, Formacolor, Unicolor® T.M. Reg. U.S. Pat. Off.



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F. M. HOWELL & CO.
79-95 PENNSYLVANIA AVENUE, ELMIRA, N. Y.

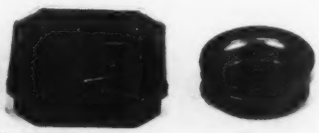
Equipment & Materials

(Cont'd from page 198)

the colored marking foil against the material to be coded as it moves through the machine. As each imprint is made, the used marking tape automatically moves and rewinds, ready for the next imprint. Details are offered by the supplier. *Ackerman-Gould Co., Oceanside, N.Y.*

Two-piece, formed plastic boxes

Light weight, rigidity and shatterproofness are some of the advantages cited by Extruded Plastics for its new line of two-piece, formed butyrate boxes. The containers are suggested for use in the packaging of cosmetics, sundries, hardware, jewelry, notions and many small items. The two-piece boxes reportedly are produced by a special process that maintains a high degree of dimensional accuracy in the lightweight plastic. Standard box designs include round faceted, round flat, round dome, square emerald cut and square flat. Custom shapes also are available. The boxes, sold under the Tulox name, are offered in a variety of sizes. Clear or colored tops and bottoms are available. *Extruded Plastics, Inc., Norwalk, Conn.*



Low-cost electronic counter

Standard Instrument's Tally-Count 242 is a fully electronic predetermining counter, capable of batching in quantities up to 100. Speed of the attachment is reported to be up to 1,000 operations per minute. Other features cited for the counter include low initial cost, no moving parts to wear and instantaneous reset to zero at the completion of each batch. Actuation of the item is by external contacts (micro switch, magnetic switch, toggle switch and relay). It is suggested for use in container-filling operations. *Standard Instrument Corp., 675 Broadway, New York 12.*

Flexographic label maker

Sohn adds to its line a flexographic label-making unit which will print and die cut labels ranging in size from 1 by 1 in. to 5 by 6 in. Printing plates and colors can be changed in seconds on the easy-to-operate machine, says the supplier. The new unit, Model 6056, operates at a rated speed of 112 rpm. Printing and die cutting are done in a simultaneous operation. Materials that can be accommodated include paper, foil and tag stock. *Sohn Mfg., Elkhart Lake, Wis.*

Stretchable-plastic banding loop

A velvet-textured stretchable-plastic banding loop has been added to Chicago Printed String's Rapid Ribbon line of decorative gift-wrapping materials. Band loops are available in a variety of colors. Suggested applications include their use as box enclosures and for holding several items of related merchandise together as a single unit. For additional information, contact the supplier. *Chicago Printed String Co., 2300 Logan Blvd., Chicago 47.*

Two-color rotary/flatbed press

A new two-color press, incorporating a combination of rotary and flatbed printing, is available from Heidelberg. The press is claimed by its supplier to put two-color printing advantages (21-by-28 and 15-by-20½-in. sheet sizes) within reach of small and medium size folding-carton manufacturers. In addition to low initial cost, the press is reported to offer such features as hairline register of automatic cylinders, built-in wash-up for rollers and forms, pyramid inking systems, complete gripper-sheet handling from feeder to delivery, unyielding impressional strength, minimum makeready and high production speed. The press offers one-color as well as two-color printing. *Heidelberg Sales & Service, 73-45 Woodhaven Blvd., Glendale 27, N.Y.*

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MULTIPURPOSE

FLEXOTUF

SUPERIOR FLEXO INKS FOR PACKAGING FILMS

Commercially proven for over three years, versatile Flexotuf inks offer the film printer advantages not to be found in conventional flexo inks . . . so many advantages that many of our customers will use nothing else. Here's what you can depend upon with Flexotuf, because they are still superior to all imitations for press performance, versatility, aging qualities and lasting printed film characteristics:

1. Exceptionally high gloss at high press speeds
2. Excellent printability
3. Outstanding block and moisture resistance
4. Anti-foaming
5. Rich colors that set new standards for brilliance
6. Added eye and sales appeal for the customer's package

With multipurpose Flexotuf, you keep ink inventories down, quality up. Get the whole story . . . ask the man from IPI!

IPI, IC and Flexotuf are trademarks of Interchemical Corporation.
Mylar and Saran are trademarks of duPont and Dow respectively.

INTERCHEMICAL PRINTING INK

CORPORATION DIVISION

EXECUTIVE OFFICES: 67 WEST 44th STREET, NEW YORK 36, N. Y.

For Your Information

"How to Proceed Under the Food Additives Amendment" is a 12-page booklet (the first section of a seven-part manual on food additives) published by the **Manufacturing Chemists Assn.** Designed as a manufacturers' guide to legal and technical considerations, the booklet explains in detail how to comply with the amendment. After a page of preliminary discussion, a question-and-answer section tells how to determine whether a substance should be classified as a food additive. Subsequent sections give procedures for filing petitions for approval, for filing objections to regulations and for filing petitions to the U. S. Circuit Court of Appeals. For copies of the booklet, at 50 cents each, write MCA, 1825 Connecticut Ave., N.W., Washington 9, D.C.

Park

A. L. Park of Bemis Bro. Bag Co. was elected pres. of **The Industrial Bag & Cover Assn.** at the group's recent annual meeting. New v.p. is **E. H. Look**, the Portco Co. **Philip O. Deitsch** continues as managing director and **William V. Driscoll** is administrative officer. This year's meeting marked the 10th anniversary of The Industrial Bag & Cover Assn. Mr. Deitsch has served as director of the association since its founding.

A contribution of $14,000 has been made by **Aluminum Co. of America** to the **Michigan State University School of Packaging Foundation** building fund. Cash gifts and pledges received to date, reports MSU, total more than $200,000. The fund (which has a goal of $2,000,000) will be used to build a new School of Packaging on the University's campus at East Lansing.

Despite labor and supply problems, more tinplate steel cans were produced in 1959 than ever before, exceeding the former peak year of 1956 by more than 2.6%. This information is from the "Annual Report of Steel and Tin Consumed in Metal Cans," published by the **Can Manufacturers Institute.** The report, in the form of a 28-page booklet, was compiled with the assistance of source material from the U. S. Government Bureau of Census, the Bureau of Mines and the American Iron & Steel Institute. Production of cans for soft drinks rose 33.9% from the 1958 figure, according to the report. Other product categories which showed an increase from 1958 in metal-can use were: beer (9.8%), oil (7.5%), meat and poultry (7.4%), coffee (5.7%) and pet food (4.2%). The report, liberally illustrated with charts and graphs, also gives production and consumption figures for the years 1950-1959, inclusive. Copies of the report are available on request to Can Manufacturers Institute, Suite 1100, 551 Fifth Ave., New York 17.

At the recent 14th annual meeting of the **National Wooden Pallet Mfrs. Assn.,** it was reported that sales of wooden pallets for the first five months of 1960 reached a record high. Despite an expected slowdown in third-quarter sales, says NWPMA, 1960 should prove to be a record sales year for the industry. At its meeting, the association also adopted a set of rules for pallet inspection procedure and approved the continuation and expansion of a cooperative advertising campaign.

ANUGA, Germany's **International Food Show,** will be held in Cologne, Sept. 23-Oct. 1, 1961. The biennial exposition includes coverage of food processing, packaging and marketing. Information on the show is available from the German-American Chamber of Commerce, 666 Fifth Ave., New York 19.

The 1959 Edgar Marburg Lecture, titled "New Polymers—New Problems" is available in booklet form from the **American Society for Testing Materials.** The lecture was given by **Herman F. Mark,** director of Polymer Research Institute, at the 62nd annual meeting of ASTM. It discusses problems in the polymer field and polymer properties which industry attempts to exploit to develop new materials. The annual Edgar Marburg Lecture perpetuates the memory of ASTM's first secretary. Copies of the booklet, at $1 each, can be obtained by writing ASTM headquarters at 1916 Race St., Philadelphia.

Some 17 American firms have taken exhibit space at AUTOPAC, **The First International Packaging Machinery Show,** to be held Oct. 14-23 in Paris. Sponsored by the **French Packaging Institute,** the machinery show will run concurrently with the **14th French Packaging Show.** Both expositions will be held in the huge new CNIT Exposition Hall (see photo), which provides a

total exhibit area of 25,000 acres on five levels. A major reason for the organization of AUTOPAC, say its sponsors, is to provide a marketplace where industry personnel visiting European packaging shows can see under one roof all the new packaging machinery available.

The **School of Packaging** at **Michigan State University,** Lansing, Mich., has announced the promotion of **Dr. James W. Goff** to rank of professor. The event, which marks the establishment of the first full professorship in the packaging field, signifies the growing importance of the packaging program in the University's over-all plans.

At a special meeting of the **Fibre Drum Mfrs. Assn.** recently held in New York, it was voted to dissolve the association. According to announcement, the reason for this action was the inadequate participation and representation of industry in the association, despite continued growth of the fibre drum industry.

Wallace Ungemach, pres. of Wallace Paper Box Corp., has been re-elected pres. of the **National Paper Box Mfrs. Assn. Bill Price** of Carolina Paper Box Co. is v.p., and **Bertram Gordon** of L. Gordon & Son is treas. Newly elected

Events

Sept. 11-14—**Produce Packaging Assn.,** annual convention and exposition, Americana Hotel, Miami Beach, Fla.

Sept. 12-14—**European Packaging Federation,** general assembly, Stockholm, Sweden.

Sept. 13-15—**New York Section, American Chemical Society,** chemical exposition, Statler Hilton, New York.

Sept. 18-21—**National Paper Trade Assn.,** fall meeting, Conrad Hilton Hotel, Chicago.

Sept. 20-21—**Research & Development Associates, Food & Container Institute,** military-industry conference on dehydration methods of food preservation, Stock Yards Inn, Chicago.

Sept. 22-23—**Flexographic Technical Assn.,** meeting, Roosevelt, New York.

Sept. 25-30—**University of California,** packaging-plant layout and materials-handling short course, Conference Center, Lake Arrowhead, Calif.

Sept. 27-29—**Technical Assn. of the Pulp & Paper Industry,** 11th annual testing conference, Pantlind Hotel, Grand Rapids, Mich.

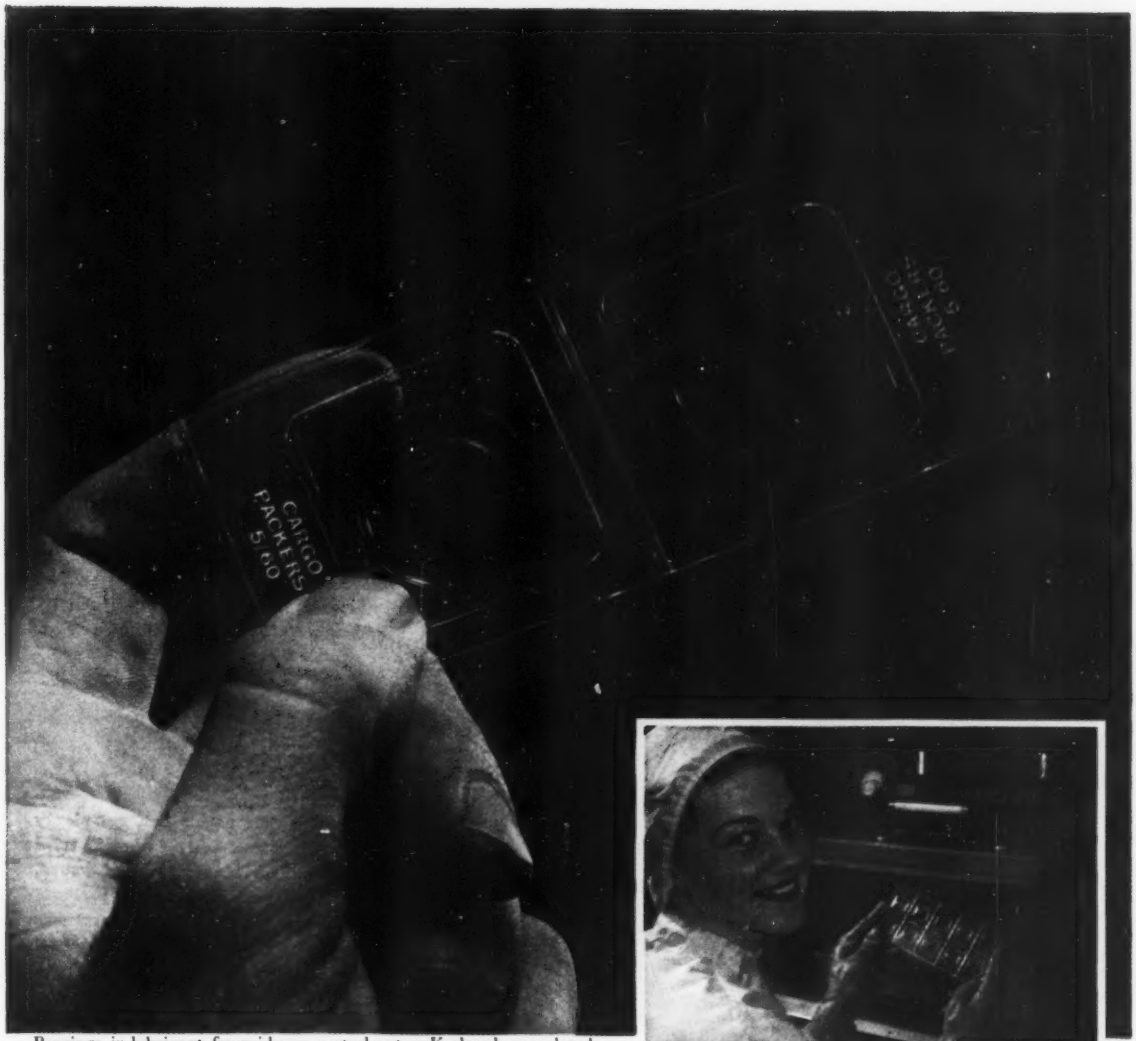
Oct. 3-7—**Brewing, Bottling & Allied Trades Exposition,** Olympia, London, England.

Oct. 14-23—**French Packaging Institute,** AUTOPAC, First International Packaging Machinery Show and 14th French Packaging Show, Paris.

Oct. 19-26—**Plastics Research Institute,** second International Plastics Exhibition, Utrecht, Holland.

Oct. 23-26—**National Frozen Food Assn.,** merchandising convention, Statler Hilton, New York.

Oct. 27-28—**American Society of Industrial Designers,** 16th annual conference, Edgewater Beach, Chicago.



Bearings, in lubricant, for guidance control system Kodapak-capsulated.

Packaging operation, White Area, Cargo Packers, Inc.

Perfect climate packaged with the product ...in Kodapak Sheet

When the armed forces need a replacement bearing they need it "here and now"! At sea, in the tropics, at the Poles! What's more, they want it clean as a whistle—no grit, grime or corrosion!

That's why many bearing manufacturers have their products sealed in tough, crystal-clear Kodapak II, by Cargo Packers, Inc., (Glendale, N.Y.). Here, in a surgically clean, *temperature-moisture controlled White Area* "hydrogen sulfide and sulfur oxide gases are absent . . . Particle count is held to less than 100 per sq. in. of .45 micron porosity paper." And this climate is packaged with the product!

Unmatched in versatility, Kodapak Sheet does protective jobs of all sorts. Uniform, dimensionally stable, it is economical to process. Sound interesting? Call on our representative or write.

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Kodapak SHEET

Sales Offices: New York, Chicago, Atlanta. Sales Representatives: Cleveland, Philadelphia, Providence. Distributors: San Francisco, Los Angeles, Portland, Seattle (Wilson & Geo. Meyer & Co.); Toronto, Montreal (Paper Sales, Limited).

Kodapak - trademark for Eastman Plastic Sheet

director of NPBMA are **J. Boit Wiswall** of Consolidated Paper Box Co. and **A. David Shoup, Jr.**, of Shoup, Owens, Inc.

Howard A. Wolf, chairman of Wolf Bros., manufacturer of specialty paper bags, boxes and wrapping paper, has been named chairman of the board of governors of the Philadelphia Museum College of Art.

Robert E. Downie, supervisor of printing development for American Can's Marathon Div., becomes chairman of the Research Committee of the **Lithographic Technical Foundation**. He succeeds **U. G. Colson** of U. O. Colson Co. The research committee headed by Mr. Downie is composed of 200 representatives of lithography and supplier firms.

New chairman of the public relations committee of the **Society of Plastics Engineers** is **Frederick C. Sutro, Jr.**, of Spencer Chemical Co. He was appointed to the post by his successor as SPE pres., **George W. Martin** of Holyoke Plastics Corporation.

"Multiple Packaging: Fad or Fixture" is the title of a new 16mm sound-color film produced by **Continental Can Co.** The 15-min. film is designed to familiarize viewers with the use of multipacking as a merchandising tool. It also offers guiding rules by which the individual packager can decide whether this selling medium will benefit him. The film can be obtained for showings through the company's metal-can and folding-carton sales offices or by writing to Boxboard & Folding Carton Div., Continental Can Co., 530 Fifth Ave., New York 36.

Delegates and members from the 18 countries of Europe affiliated with the **European Packaging Federation** will meet in Stockholm on Sept. 12 for a three-day general assembly of EPF and a short packaging-study trip in Sweden. Members of affiliated American packaging organizations are invited to attend. On Tuesday morning, Sept. 13, three talks will be given by prominent Swedish packaging authorities. The topics will be: development of the Scandinavian packaging market, dairy-products packaging and the use of data-processing equipment in packaging. Tours of packaging installations, supplier mills and a modern shopping center also are scheduled.

Charles Ruble, Sr., pres. of Standard Paper Box Corp., becomes a member of the exec. committee of the **Folding Paper Box Assn. of America**. He has been a member of the association almost from its inception.

The third annual **Package Design Workshop** will begin at **Pratt Institute** on Tuesday evening, Sept. 20. It will continue for 15 consecutive Tuesday evenings. **Robert I. Goldberg**, package designer, is workshop director. The workshop, which will be addressed by leading professionals, is open to be-

[Continued on page 210]

Standard's marketing approach to packaging pays off... in many unusual ways

The world's biggest package

It's as big as a 10-story building, but weighs only 150 lbs.! This giant space balloon is made of metallized plastic film just .00025 of an inch thick, but it withstands the extreme hot and cold temperatures of space travel, the heat of the launching rocket—and folds into a metal container only 30 inches in diameter. The film itself is Mylar® metallized by Standard's *National Metallizing Division*.

Tough tabs solve sticky problems

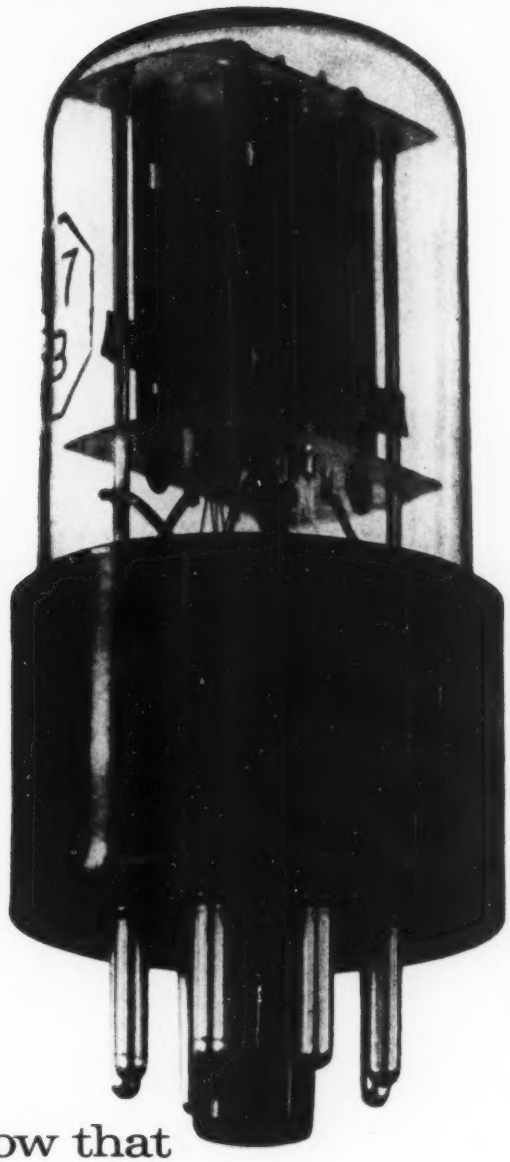
The average man, eating out, got plenty sore about tabs that tore off when he tried to open small individual servers of syrups, jellies, and honey. Packers sympathized with him, took the problem to Standard's *Closure Division*. Result: a tab lid that does not tear, is also airtight-lined with Saran® to keep delicate flavors longer.

"Test" package sells lingerie

A lingerie manufacturer recently introduced a new type of luxurious, super-stretchable fabric for his panty line. He felt it would sell itself if packaged so that women could *touch* it, test-stretch it. Standard's *Bradley Gilbert Division* designed the individual package with a sturdy, metal-knobbed, pull-out drawer. Displayed on a counter rack, "It's going great," says the lingerie man.

FILM • FOIL • PAPER AND BOARD PACKAGING • PAPER PLATES • CUPS • BOWLS AND TRAYS • FINE PRINTING AND BUSINESS PAPERS • PAPERBOARD AND PULP STOCK
ALL FROM ONE COMPLETELY INTEGRATED, CONVENIENT SOURCE

STANDARD PACKAGING CORPORATION



Did you know that 3 out of 4 electronic tube makers use cartons by Standard Packaging?

It's hardly surprising when you consider the scope of Standard's *marketing* approach. In this case, it resulted in the first *suspension* package for tubes. • The electronic tube, a study revealed, must be protected against many people besides the freight handler. • The consumer, because he has an entrenched habit of *shaking* before buying. The repair man, because tubes take a beating in his tool kit. The dealer's stock boy, because he frequently stacks tubes as if they were boxes of nails. • Does *your* package perform all the safeguards and selling functions it should? Standard's marketing approach could be the answer.

STANDARD PACKAGING CORPORATION • Executive Offices: 200 East 42nd Street, New York 17, New York

"The package *is your product...* at the point-of-sale!"

What a combination . . . merchandising appeal *and* consumer acceptance! Bradley-Sun plastic tubes now reach into a variety of markets . . . answer the need for high quality, economical packaging that *really* stimulates buying. Colorful printing, unusual caps, and internal or external coatings bring extra allure and packagability to many products. Investigate Bradley-Sun's exclusive extrusion fabricated tubes. The possibilities for boosting the sale of your product are built-in . . . when you switch to Bradley-Sun plastic tubes!

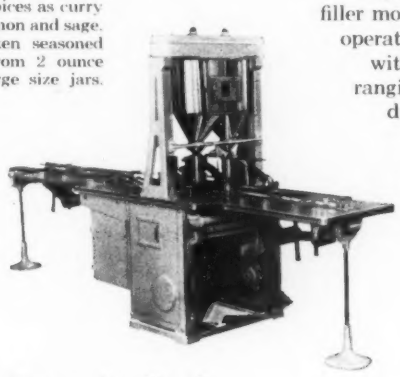
BRADLEY Sun

Division of **American Can Company**, *Hillside, New Jersey* / *Sun Tube of Canada, Ltd. Ottawa, Ontario*

FMC Auger Fillers are "quick change" performers for Spice Islands

Spice Islands Company, world famous San Francisco packer of exotic spices and seasonings, selected FMC Auger Fillers to meet rigid requirements. They needed accuracy and speed. But just as important they had to have quick changeover in packaging a wide range of sizes and products of varying characteristics. Fully automatic and semi-automatic fillers handle with equal facility such spices as curry and garlic powders, ground cinnamon and sage, hickory smoked salt, and chicken seasoned stock base. Containers range from 2 ounce "apothecary" to regular and large size jars.

The Duplex Auger Filler model HG-84 shown here is one of several units installed at Spice Islands. Completely automatic, it is available with a choice of filling methods—cam volumetric, gross weighing or auger combined with vacuum for packing dusty products—at speeds up to 70 packages per minute. Many other auger filler models for automatic or semi-automatic operation are designed to handle products with "difficult" characteristics at speeds ranging up to 140 units per minute. Production run accuracy is outstanding in filling cans, jars, cartons or other containers. Size and product changeover is exceptionally fast and simple for powders, granules and certain paste products.



Putting Ideas to Work

FOOD MACHINERY AND CHEMICAL CORPORATION

FMC Packaging Machinery Division

Stokes & Smith Plant

4904 SUMMERDALE AVENUE, PHILADELPHIA 24, PA.

For the whole story of how FMC Auger Fillers can improve your packaging, write for your copy of Bulletin P-811.

AUGER

8 "BIG"
ADVANTAGES OF LUSTEROID PLASTIC CONTAINERS

Crystal-clear for better product display at points-of sale . . . for better "eye appeal" to step up the buying urge. Here are Lusteroid's added plus values.

- PRODUCT PROTECTION — *no glass hazards*
- LESS PACKAGING COSTS — *low unit cost*
- REDUCED LABELING EXPENSE — *print right on Lusteroid*
- CUT EXTRA PACKING COSTS — *no breakage loss*
- LOWER SHIPPING RATES — *low unit weight*
- REASONABLE MINIMUM ORDERS — *small quantities available*
- PROMPT DELIVERIES — *flexible production facilities*

Full range of styles and sizes in crystal-clear, opaque, or colors.

LUSTEROID — THE PERFECT CONTAINERS FOR SMALL PRODUCTS IN ANY FORM

Send for bulletin

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CONTAINER COMPANY, INC.
10 West Parker Avenue
Maplewood, New Jersey
South Orange 2-5779

F.Y.I.

[*Continued from page 206*]

ginning and advanced artists. **Pearl Hagens**, senior editor of MODERN PACKAGING, will attend the last class session to aid students in evaluating final projects. Registration for the workshop must be made at the Pratt Institute Evening Art School, 221 Ryerson St., Brooklyn, during the week of Sept. 12.

Dollar volume of folding-carton shipments during the first six months of 1960 topped by 2.2% the volume recorded for the same period in 1959, reports the **Folding Paper Box Assn. of America.** In tonnage, however, shipments are off by 0.3% from last year. According to FPBAA, the use of solid bleached sulphate in the manufacture of folding cartons in the January-June period of 1960 increased 25.7% from the same period last year.

Designed as a forum for discussion of views and developments in the processing of macromolecular raw materials into product form is the **International Congress on the Technology of Plastics Processing.** It will be conducted Oct. 17-19 in Amsterdam, Holland. Further information can be obtained from The Secretariat, Tesselschadestraat 5, Amsterdam-W, Holland.

The **Packaging Institute's** Drug & Pharmaceutical Committee recently held an Interior Packaging Seminar at the Kimberly-Clark Marketing Center at Neenah, Wis. The group was told by **Kimberly-Clark's John Hoffman** that the most important factor in a cushion-packaging material is thickness, not weight. He pointed out that proper cushioning is the absorption of energy developed by a falling object without exceeding the force that will damage the packaged article. Mr. Hoffman noted that, until recently, most packagers believed that heavier cushioning gave better protection than lighter materials; thus most interior-packaging materials were sold on a pound basis. This theory has been refuted, he said, and now most manufacturers have converted to a thickness basis for cushioning materials.

England's **Institute of Packaging** will hold a two-day conference on "Odor in Packaging," Nov. 24-25 in London. Representatives from Europe and the United States will be on hand to discuss methods for combating the odor problem, with particular attention to minimizing or eliminating ink odors. Details about the conference can be obtained from The Secretary, The Institute of Packaging, Malcolm House, Empire Way, Wembley Park, Middlesex, England.

A swatch booklet containing representative samples of the more than 200 grades and basis weights of glassine and greaseproof papers available for packaging has been published by the **Glassine & Greaseproof Mfrs. Assn.** Bound in the booklet are 23 samples of these papers in a variety of forms, including plain, waxed, printed, lacquered, wax-laminated, laminated to foil, metalized and treated for heat seal, for wet strength and for release. The booklet is available, without cost, from the association at 122 E. 42 St., New York 17.

Variety Store Merchandiser magazine has added two new categories to its 24th annual Variety-General Merchandise Packaging Contest. The new awards will be given for the best counter merchandiser of 1960 and for the best package in the confectionery and foods area. Entries in all award categories must be submitted before Sept. 10 to the magazine at 419 Park Ave. S., New York.

A course in package design is being offered to students at **Bradley University's** college of engineering this fall. To facilitate the course, a variety of testing devices and instruments from firms in the packaging industry have been installed in the Peoria, Ill., institute's laboratories. The program will be concerned with fundamental engineering design approach to packaging and the solving of structural and dynamic problems in paperboard, wood and metal packages. According to the school, the need for better research development in the packaging field has been emphasized in recent years with the development of missiles and sensitive electronic instruments requiring well-engineered shipping containers.

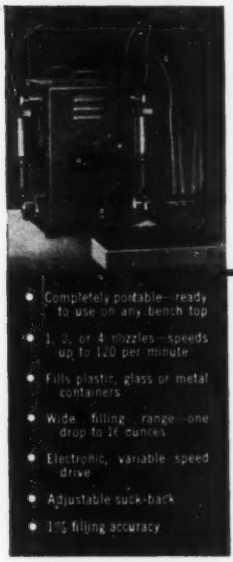
Last July, foods, drugs and cosmetics using colors became subject to an entirely new set of rules, when the Color Additive Amendments of 1960 became law. The new ruling makes it necessary to establish the safety of almost any coloring ingredient used in or on a food, drug or cosmetic. At the same time, the federal Hazardous Substances Labeling Act of 1960 came into effect. Substances not in themselves harmful in normal use but capable of causing injury, come within the scope of this law. Two paperback booklets covering the new acts and explaining their application are now available for one dollar each from **Commerce Clearing House, Inc.,** 4025 W. Peterson Ave., Chicago.

The June-July issue of a new illustrated four-page publication, *Packaging Lines*, was recently distributed by **F. B. Redington Co.,** 3000 St. Charles Rd., Bellwood, Ill. The bi-monthly publication is primarily directed to those interested in cartoning and/or wrapping of products by automatic and semi-automatic packaging machinery.

The 10th Corrugated Containers Conference, sponsored jointly by the **Technical Assn. of the Pulp & Paper Industry,** New York, and the Technical Section of the **Canadian Pulp & Paper Assn.,** Montreal, will be held Oct. 10-13, at the Royal York Hotel in Toronto. The technical program will be supplemented by visits to the corrugated container plants of Hinde & Dauch, Bathurst Containers and Hygrade Containers. **R. W. Buttery** is general conference chairman.

"Open Minds, Open Doors" is the theme of the 1960 convention of the **American Bottlers of Carbonated Beverages,** to be held in Detroit, Nov. 14-17.

NOW—FILL ANY LIQUID WITH THE NEW *Filamatic*



- Completely portable—ready to use on any bench top
- 1, 2, or 4 nozzles—speeds up to 120 per minute
- Fills plastic, glass or metal containers
- Wide filling range—one drop to 1¢ ounces
- Electronic, variable speed drive
- Adjustable suck-back
- 1% filling accuracy

LIQUID FILLER

Fills Free-Flowing, Viscous and Foaming Liquids!

Solve your filling problems with the new Filamatic—the **only** portable, volumetric filler that handles all liquids. Provides drip-free filling of water-thin products, heavy oils, viscous adhesives or foaming lotions. Fills polyethylene bottles, glass or metal containers. Single drop to 16 oz. capacity increases to 2½ gallons with Multi-Stroke Attachment. Write today for new 12 page brochure. . . .

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TRADE MARK REG. U.S. PAT. OFF

SPECIALLY WAXED SINGLE PLY and LAMINATED GLASSINE for HEAT SEALING UNIT PAKS

GLASSINE & GREASEPROOF for CONVERTERS

GLASSINE and GREASEPROOF for BOARD LINING
Protects AROMA • FLAVOR • FRESHNESS

TRANSPARENT
OPAQUE
for— **COLORS**
WHITE
PLAIN
HEAT SEAL
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QUILON
PLASTIC
TREATED
LAMINATED

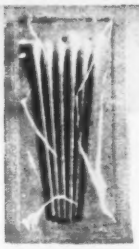
Bags
Boxes
Cups
Corrugated
Dividers
Envelopes
Liners
Trays
Tubes
Unit Paks
Wraps

for—
Biscuits, Buns, Cakes
Crackers
Cookies
Doughnuts
Candies
Chips
Food Mixes
Powders
Nuts
Snacks
Coffee
Tea

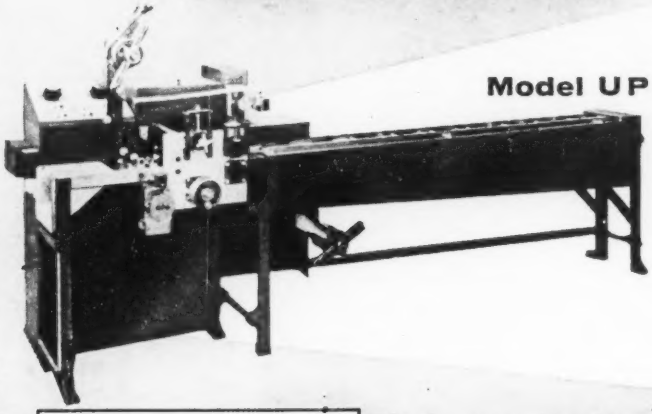
83 Years of Quality and Service

THE HAMERSLEY MFG. CO. PAPERMAKERS
GARFIELD, NEW JERSEY

wrap-ade HIGH SPEED UNIT PACKAGER



Typical Fin Seal Package



Model UPC-CONVEYOR FEED

Ideal for packaging small textile products, flat food items, paper goods, toys, premiums, bandages, or any other flat product under 1" thick.

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Wrap-Ade Unit Packagers are available for packaging:

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- Powders
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Send us a sample of your product today for our prompt quotation.

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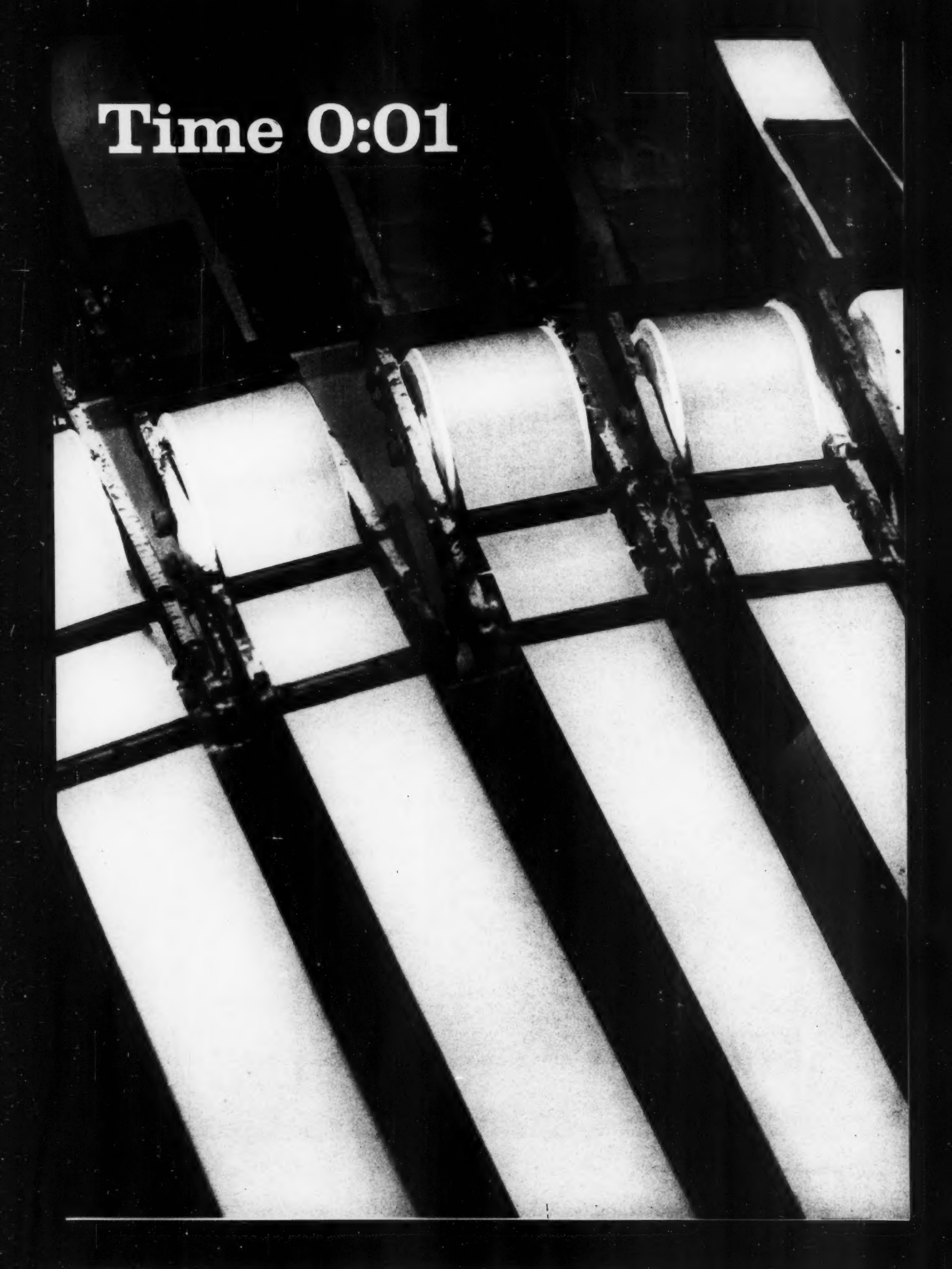
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Seconds that count in your packaging costs

In the single second it took our photographer to snap this picture, high speed tube winding machinery applied an Armour Adhesive to 30 inches of paper. Controlling costs under conditions like this can well begin with a fresh look at your adhesives.

For instance, price might prompt you to buy an adhesive that costs less. But, as little as a penny or two per pound more can give you *provable* long run savings from increased mileage alone. And there's more.

Operating improvements such as faster tack, more open tack time, and greater water resistance are yours through advanced formulations and because of the higher percentage of solids in quality adhesives. Higher solids content lets you use an adhesive on a wider variety of papers, gives you quantity purchase benefits, and reduces your adhesives inventory.

Armour knows adhesives both as a major user and manufacturer. An Armour Adhesive Specialist is ready to spend time on your problem. He'll show you how to make the seconds count for less packaging costs.

Call him direct or contact our sales headquarters. Armour Alliance Industries, Adhesives Division, Alliance, Ohio.

ARMODEX

Liquid dextrin-based formulation. Available in many ready-to-use and dilutable grades for semi automatic and automatic filling operations, high speed, right angle and straight line gluing, spiral and convolute tube winding, kraft bag side seam and bottom gluing, laminating, and palletizing.

ARMOGLU

Formulated animal glue-based adhesive. Available in liquid and jelly forms for folding cartons, gummed tape, and binder for non-woven fabrics.

FLEXGLU

Formulated cake-type animal glue-based adhesive. Available in many grades for set-up boxes, and laminating. Converts rapidly. Free from foam with good non-warp characteristics. Wide working ranges and sets.

SEBAN

Liquid Polyvinyl Resin—ready to use. Special series for carton sealing, case sealing, straight line and right angle gluing, tube winding, window boxes, bags, labels, carrying cartons, laminating, glue-lap.

DRIFLEX

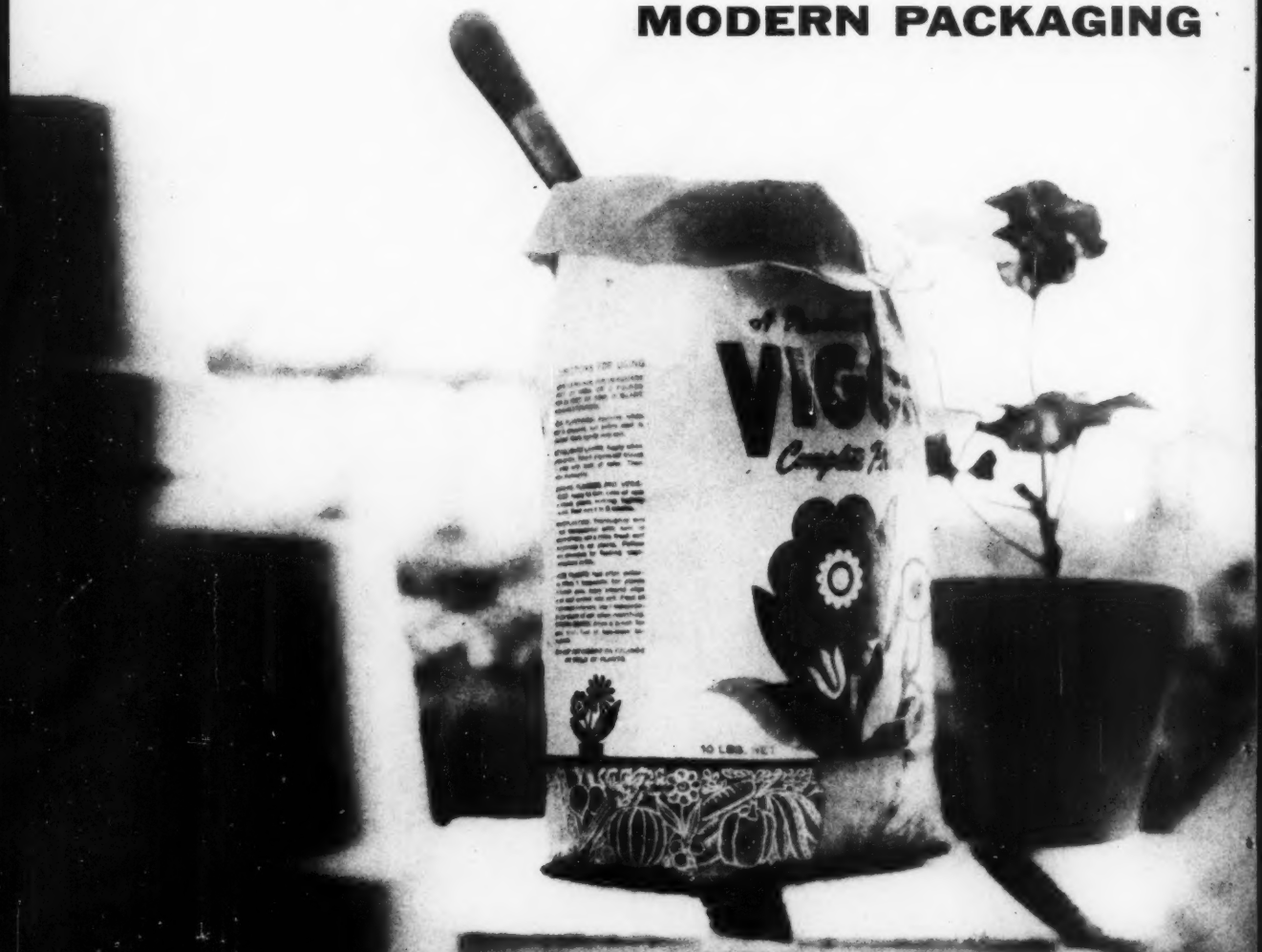
Formulated dry granular animal glue-based adhesive. Available in several grades for high speed paper box and folding carton operations where rapid tack and non-warp characteristics are required. Converts rapidly, has indefinite storage life. Foam-free.

ADHESIVES DIVISION

ARMOUR ALLIANCE INDUSTRIES

most products are packaged...and most important packagers read

MODERN PACKAGING



A BRESKIN PUBLICATIO[illegible] MADISON [illegible]

ABC ABP BPA

CUBITAINER is a composite bulk liquid shipper consisting of a plastic cube-shaped container, a suitable closure for the container, and a corrugated or wirebound box.

there's a CUBITAINER® for every application

SPECIFICATIONS	1 qt.	1 gal.	5 gal.	15 gal.
Cube types available	reg. or hvy. polyethylene	reg. or hvy. polyethylene	reg. or hvy. polyethylene	hvy. polyethylene
Outer boxes available	corrugated	corrugated	corrugated or wirebound	wirebound
Closures available	heat-sealed spout	h-s spout plug	h-s spout screw cap FlexSpout*	screw cap FlexSpout*
Overflow capacity	1.13 qt.	1.13 gal.	5.5 gal.	16 gal.
Min. wall thickness of polyethylene cube, inches	.005 reg. .007 hvy.	.006 reg. .008 hvy.	.009 reg. .012 hvy.	.015 hvy.
Tare weight, lbs. per complete container	.125	.425	2.20	14
No. per shipping case	500	250	50	25
Approx. weight per shipping case, pounds	37-40	40-46	44-50	50
Warehouse space cu. ft., 1000 empty containers	28.6	100.8	422.5	921
Volume occupied, filled, cu. ft., each	.0405	.191	1.075	3.25
No. of filled containers per 40 ft. boxcar	64,615	13,300	3,240	900
No. of filled containers per 34 ft. trailer	32,400	7,400	1,617	525
ICC spec. Cube	—	—	ICC-2U	ICC-2U
Corrugated	ICC-12B	ICC-12B	ICC-12B	—
Wirebound	—	—	ICC-16A	ICC-16A

*Registered trademark of the Rieke Metal Products Co.

ADVANTAGES:
single trip, lightweight, low cost, standard filling, durable, chemically inert, simplified handling, for regulatory products.

TYPICAL APPLICATIONS:
photographic developers, x-ray developers, pharmaceuticals, enzymes, rennet extract, flavoring concentrates and extracts, latex adhesives, liquid fertilizer, battery electrolyte, phosphoric acid, ferric chloride, photo-engraving solutions, catalysts, anti-freeze, fabric and leather cleaners, metal cleaners and brighteners, radiator cleaners, water treatment chemicals, cottage cheese coagulator, 50% sodium hydroxide, 45% potassium hydroxide, muriatic acid, 15% sodium hypochlorite, aluminum hydroxide gel, lime solvent, chromic acid, meat tenderizer, methyl ethyl ketone peroxide, milk, distilled water.

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U. S. Patents Digest

This digest includes each month the more important patents of interest to packagers. Copies of patents are available from the U. S. Patent Office, Washington, D. C., at 25 cents each in currency, money order or certified check. Postage stamps are not accepted. Edited by H. A. Levey.

Carton-Forming and Loading Apparatus, Russell W. Anness (to Lengsfield Bros., Inc., New Orleans, a corporation of Louisiana). U.S. 2,939,258, June 7. Carton-forming and loading apparatus for forming and loading from pre-cut and scored blanks open-ended cartons of the type having end and side walls and folded flaps and saddles joining the side and end walls to hold articles.

Machine for Closing Container Flaps, George L. Ogle, Timon R. Betts and Gerald W. Turner (to Container Corp. of America, Chicago, a corporation of Delaware). U.S. 2,939,260, June 7. A machine for closing and sealing the bottom closure of shipping containers of rectangular form which are adapted to enclose heavy articles by slipping the container downward thereover, such container having a hinged closure flap on the lower end of at least one wall.

Plastic Container, Serenus H. A. Young, Drexel Hill, Pa. U.S. 2,939,603, June 7. A fibrous reinforced plastic container comprising two separate complemental hollow components, each molded from pre-forms composed of a substantially uniform intermixture of discrete organic and inorganic fibres impregnated with a thermosetting resin.

Stackable and Nestable Container, George G. Frater and Milton A. Frater (to G. B. Lewis Co., Watertown, Wis., a corporation of Wisconsin). U.S. 2,939,607, June 7. A stackable and nestable container, comprising a first pair of opposed walls with at least one of said first pair of walls sloping inwardly toward the other from top to bottom.

Folding Container With Slip-In Veneers, Mark B. Royce (to Continental Can Co., New York, a corporation of New York). U.S. 2,939,620, June 7. A shipping container comprising a rectangular box of fibreboard and the like having at least one of its side walls cut open over a substantial area, a separate wood veneer panel fitted inside such wall and extending across its open area.

Container With Locking Closure, Leonard W. Snyder (to Container Corp. of America, Chicago, a corporation of Delaware). U.S. 2,939,625, June 7. A fibreboard container of rectangular form having interconnected side and end walls, cover panels hinged on the top edges of the side walls and adapted to meet along an intermediate line to close the top of the container.

Decapping Containers, Gerald W. Baker (to Ball Brothers Co., Muncie, Ind., a corporation of Indiana). U.S. 2,940,229, June 14. Apparatus for automatically removing closure elements from successively presented, sealed product containers.

Carton-Locking Apparatus, Frank C. Gross, Wilbraham, Mass. (to Package Machinery Co., East Longmeadow, Mass.). U.S. 2,940,235, June 14. Apparatus for locking cartons, comprising means for continuously advancing each carton past a locking station with its lid in closed position and a locking tab extending therefrom beyond a slotted side wall of the carton.

Semi-Automatic Wrapping Machine, John D. Conti (to American Viscose Corp., Philadelphia, a corporation of Delaware). U.S. 2,940,236, June 14. Article-wrapping apparatus including a movable table on which a sheet of wrapping material is adapted to be disposed and manually manipulated to form a tube about an article to be wrapped.

Container, Glenn L. Beall (to Abbott Laboratories, North Chicago, a corporation of Illinois). U.S. 2,940,444, June 14. A container for fluids comprising in combination: a flexible-walled body section of chemically inert and physically non-porous plastic, said body section having integrally affixed thereto at least one passage means communicating with the interior of the body section.

Apparatus for Packing Containers Into Cases, Emmett H. Murphy (to Food Machinery & Chemical Corp., San Jose, Calif., a corporation of Delaware). U.S. 2,940,579, June 14. A case-loading machine comprising a plurality of ramps, each of said ramps being adapted to receive a file of containers, a case-loading chute spaced from said receiving ramps, a transfer mechanism arranged to be operated for transferring containers from ramps to case-loading chute.

Bottle Closure, Charles A. Schulz (to Lok-Seal, Inc., New York, a corporation of New York). U.S. 2,940,628, June 14. A closure for the neck of a bottle, comprising a polyethylene stopper having an externally ribbed, hollow axial extension, an outstanding annular flange at the upper end of said extension, and a relatively thick-walled, hollow polygonal crown above said flange.

Machine for Unloading Articles from Containers, William Pechy (to American Can Co., New York, a corporation of New Jersey). U.S. 2,940,636, June 14. A machine for unloading containers arranged in a compact unit of a plurality of juxtaposed parallel vertical stacks of single rows of containers, comprising in combination an effective support for said unit of containers.

Container for Lamp Bulbs or the Like, Paul W. Miessler, Sr. (to The Hankins Container Co., Cleveland, a corporation of Ohio). U.S. 2,940,653, June 14. A collapsible container for lamp bulbs comprising top, bottom and side walls and a separator panel hingedly connected throughout its length to one edge of one of said side walls.

Container, Ross A. Easter (to The Pillsbury Co., Minneapolis, a corporation of Delaware). U.S. 2,940,654, June 14. A container comprising a rectangular carton formed of sheet material and having a closed bottom, the upper ends of two of the side walls of said carton being scored along horizontal lines and bent outwardly to provide relatively short flanges which extend at angles of at least 90 degrees.

Container for Sliced Food Products, Paul B. Hultkrans (to Milprint, Inc., Milwaukee, a corporation of Delaware). U.S. 2,940,861, June 14. A paperboard blank for wrapping an assembly of overlapping thin food slices, said blank being generally rectangular and scored thereacross to define a bottom and a top panel foldable over one another.

Carton-Forming and Closing Means and Method, William M. Potts, Clegg E. Price, Jerome O. Darholt and Bernard D. Dans (to Dacam Corp., Charlotte, N.C., a corporation of North Carolina). U.S. 2,941,340, June 21. That method of forming a closed container from a flat blank having a rectangular bottom and first and second opposed side flaps and first and second opposed end flaps projecting outwardly from the four edges of said bottom which comprises forcing the blank through a rectangular tubular die to cause the side flaps and end flaps to project upwardly from said bottom.

Process of Packaging and Packaging Structure, Earl S. Tupper (to Tupper Corp., North Smithfield, R.I., a corporation of Delaware). U.S. 2,941,660, June 21. A package comprising a flexible, heat-scalable open-ended hollow body, said body having an integral, peripheral flange projecting outwardly therefrom adjacent and paralleling the edge of its open end portion.

Means for and Manner of Packaging Valves and Similar Products, Stanley C. Osberg (to National Lock Co., Rockford, Ill., a corporation of Delaware). U.S. 2,941,662, June 21. Means for packaging valves and similar articles having a stem and a head at one end, comprising a carton and a filler for said carton, said filler including an upper and a lower interchangeable corrugated pad each consisting of multiple layers of corrugated paper and said pads arranged in overlying abutting relation.

Plastic Container Secured to Card, Charles E. Palmer, Somers, Conn. U.S. 2,941,664, June 21. A display assembly comprising a card and a plastic container carried thereby, said card having

this accordion packager squeezed another penny profit per pack!

And with the extra penny per pack saved by using an Acme Steel Wire Stitcher, Emenee Industries, Inc., saves more than $800 per month in assembling these plastic blister cards.

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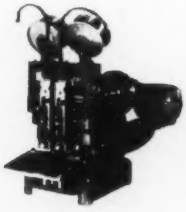

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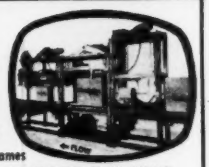

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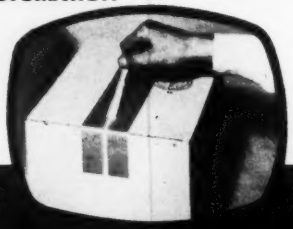

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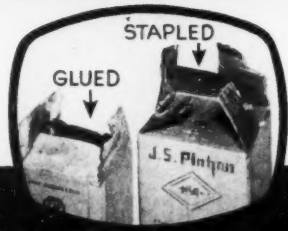

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It costs to put off . . . WIndsor 4-0644

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PALISADES PARK 3, N. J. TWX-LEON 1401 CABLE: GENCO

Patents *[Continued]*

two pairs of parallel slots in spaced, rectilinear disposition, said container having a display panel of arcuate cross section disposed substantially on one side of said card with end portions extending through a pair of said slots.

Apparatus for Handling Flexible-Walled Bags, Charles B. Harker (to Riegel Paper Corp., New York, a corporation of Delaware). U.S. 2,941,676, June 21. In apparatus for handling flat, generally rectangular flexible-walled bags having loose material therein, the combination of a carrier for supporting a plurality of generally flat, partially filled flexible-walled bags and advancing the same edgewise along a predetermined path to a release position.

Flexible Closure and Plunger for Cartridge-Container, Harold J. H. Schmidt and Vincent G. Biedenstein (to R. C. Can Co., Overland, Mo., a corporation of Missouri). U.S. 2,941,699, June 21. An end closure for a cylindrical, disposable cartridge for dispensing viscous materials having a separate cap to act as a piston to discharge these materials from the opposite end of the cylindrical cartridge by direct pressure applied to move the cap through the cartridge.

Molded-Pulp Container, Harold S. Crane and Alfred E. Comstock (to Diamond National Corp., a corporation of Delaware). U.S. 2,941,708, June 21. A nestable molded-pulp set-up box comprising a molded-pulp sheet having a general plane, said sheet having a first generally rectangular bottom section, said bottom section having a raised narrow rim extending out of the general plane thereof along and adjacent all four of the sides thereof.

Method of Producing a Partial Vacuum Package, Philip Lerner, Milwaukee. U.S. 2,942,390, June 28. A method of packaging product in a partial vacuum, comprising the steps of placing the product on the bottom of a receptacle, disposing a shrinkable film closely adjacent said product and the inner walls of the receptacle, and sealing said film along a continuous line.

Tear-Tape-Applying Mechanism for a Wrapping Machine, Clarence P. Ouellette (to Crompton & Knowles Corp., Worcester, Mass., a corporation of Mass.). U.S. 2,942,528, June 28. A tear-tape-applying mechanism for a wrapping machine in which a flexible sheet wrapper moves along a fixed path past an applying station, the machine having a supply of tear tape positioned at one side of the wrapper.

Bag-Making Machine and Method, Thomas E. Piazze (to Continental Can Co., New York, a corporation of New York). U. S. 2,942,529, June 28. In a machine for forming bags in successive pairs from a single-width, continuous web of flexible film material, a traveling conveyor and bag-forming mandrels mounted on said conveyor for moving in parallel paths.

Apparatus for Setting up Corner-Lock Cartons, William Gerald Atkinson (to Somerville Limited, London, Ontario, Canada). U.S. 2,942,533, June 28. Apparatus for setting up carton blanks having a pair of opposed slit walls and designed to receive securing flaps of an opposed pair of walls in order to set up the corner-lock carton.

Rotary Cutter for Paperboard Box Machines, Charles A. Boddy (to St. Regis Paper Co., a corporation of New York). U.S. 2,942,534, June 28. In a device for cutting sheet material diagonally, the combination comprising: a frame, rotary means journalled in said frame, a shoulder on the peripheral surface of said rotary means having at least one helical surface.

Pressurized Container and Auxiliary Adapter-Actuator Therefor, Harold F. Biewald, New York. U.S. 2,942,631, June 28. In a dispensing attachment for a pressurized, valve-controlled container which dispenses paste through a valve-controlling extrusion-nipple, an adapter having a flanged collar for securing said adapter to said container.

Container Cap and Method for Making It, Edward J. Towns (to Minnesota Mining & Mfg. Co., St. Paul, a corporation of Delaware). U.S. 2,942,747, June 28. A frangible cap which is adapted to seal a container, such as a bottle, having an outer bead at its discharge end.

Paperboard Carrier With Handle, Peter C. Collura and Robert M. Hurley (to Container Corp. of America, Chicago, a corporation of Delaware). U.S. 2,942,756, June 28. A rectangular lock-bottom carrier formed of foldable sheet material, having elongated side walls and narrow end walls hingedly connected in tubular form and adapted to be folded together as a collapsed tube.

Carton Dispenser With Means to Withdraw the Lowermost Carton, Nils H. Hogstrom (to The Ful-Vue-Pak Co., Chicago, a corporation of Illinois). U.S. 2,942,758, June 28. In combination, a stack of packaging cartons each having a pair of spaced-apart, corresponding walls diverging outwardly and upwardly and each wall being defined by a perimetric frame providing a lower frame portion.

Carton-Blank Feeding Mechanism, John R. Baumgartner (to Mercury Engineering Corp., Milwaukee, a corporation of Wisconsin). U.S. 2,942,765, June 28. In a carton-blank forming apparatus for handling multiple blanks cut from a section of a web of stock, the combination with feed means for advancing blanks in multiple and a delivery mechanism for the finished blanks.

Folding Paperboard Carton, Arthur J. Weiss (to Continental Can Co., New York, a corporation of New York). U.S. 2,942,767, June 28. A folding paperboard carton comprising four side wall panels formed in pairs joined together at both ends by glue flaps, and bottom flaps adjoining the bottoms of the side wall panels at fold lines along their respective lower edges.

Receptacle, Morris W. Kuchenbecker (to American Can Co., New York, a corporation of New Jersey). U. S. 2,942,769, June 28. A substantially rectangular unitary blank suitably cut and scored to form a receptacle, said blank comprising a bottom wall; an opposed pair of side walls hinged to the side edges of the bottom wall, an end wall hinged to an end edge of the bottom wall, and connecting flaps connecting adjacent ends of the side and end walls.

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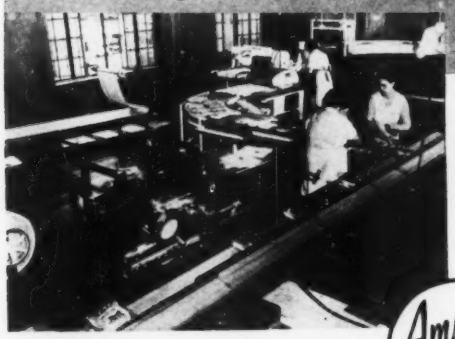

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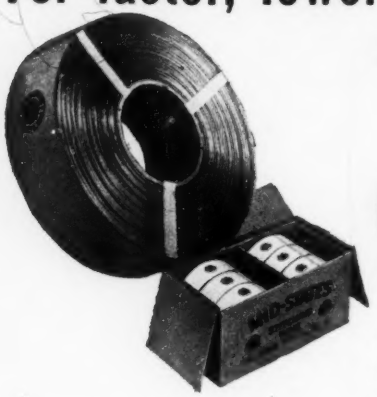

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The new Cooper's

[*Continued from page 138*]

dropping "Jockey, Jr." for its boys' garments and will instead label these as "Jockey prep T-shirt," "Jockey prep brief," etc. The idea here is not to allow even minor gimmicks or variations to interfere with full impact for the Jockey name.

Color coding of packages has been dropped. During the 1955 design change Cooper's inaugurated a system for flagging packages with red (for underwear), blue (for sportswear) and yellow (for hosiery). But as product selections have increased, the division between product categories has become increasingly obscure. Example: Is a red T-shirt underwear or sportswear? Full product visibility actually makes color coding unnecessary, since customers have no trouble distinguishing between products on the display fixture or retail counter. Having served its usefulness, color coding is out.

The new over-all package design has so captured the company's fancy that it will be used from now on as the identifying graphics in advertising, for letterheads and invoices, and for such exterior display as plant signs and trucks. ●

Single-structure carton

[*Continued from page 146*]

ciency of the seals, as shown in Table I. It can be noted that the Calk-Seal again is more efficient than the regular seal-end carton.

In addition to these tests, many other tests have been conducted to compare the functionability of the Calk-Seal carton with a number of commercial packages. In some cases it is superior and in others it offers slightly less protection, but for many varieties of products the Calk-Seal carton is satisfactory.

Conclusions

We have mentioned the basic advantages of the single-structure carton and hence the reason that it is the ultimate goal for all users of folding cartons.

Calk-Seal has made possible product protection at the sealed areas of the folding carton which is equal or superior to the barrier properties of the paperboard itself. In most applications, wax-laminated glassineboard structures have proved to offer

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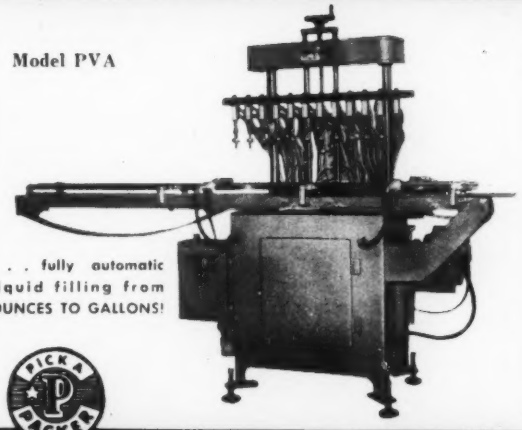

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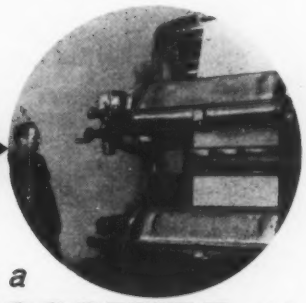

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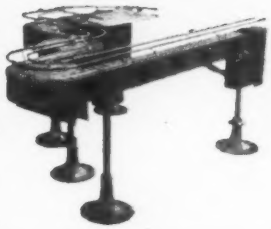

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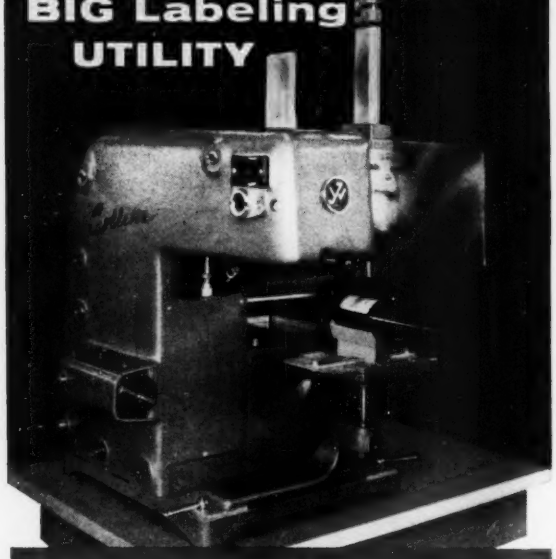

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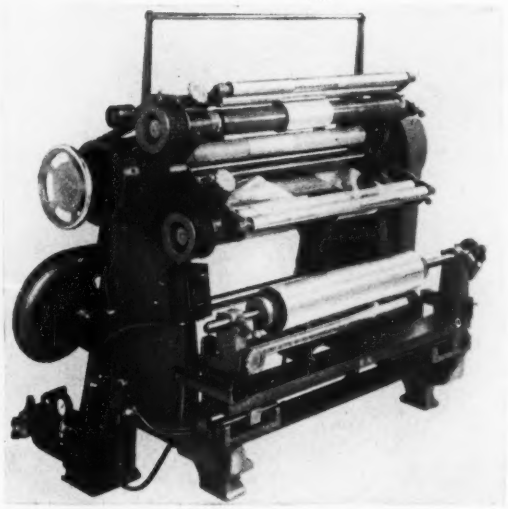

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the necessary barrier characteristics, one of the main advantages of this construction being that the wax-laminated glassine does not crack or break down at the carton score lines.

Among the products so far introduced in or converted to the Calk-Seal single-structure carton are varieties of instant potatoes, pancake mixes and cornbread. In some instances, new high-speed equipment running at speeds of 300 cartons per minute is being used. In other instances, present packaging equipment has been inexpensively converted to apply Calk-Seal.

Conclusive tests have also demonstrated the immediate applicability of Calk-Seal and hence the single-structure carton to breakfast cereals (excluding sugar-coated types), nonfat dry milk, dehydrated vegetables and many different types of flour and meal products.

Our basic conclusion is that with the advent of a sealing method such as Calk-Seal, single-structure cartons are practical for all products where the paperboard itself, with any necessary lamination and/or coating, provides adequate protection. With the continued rapid improvement in paperboard and paperboard coatings and laminates, we think it is a short time until high-speed, single-structure cartoning is practical for many frozen foods plus, of course, a wide range of dry, granular products.

This method should ultimately do more than eliminate the separate liners and overwraps for present folding-carton users. It should in many cases make possible the use of a less-expensive packaging means, the folding carton, by many packagers who today must use more-expensive packaging materials.

References

1. "Wrapless, Linerless Carton," Modern Packaging, Aug., 1957, p. 93.
2. "Siftproof Folding Carton," Modern Packaging, Oct., 1957, p. 129.
3. "A New Liquid-Tight Carton," Modern Packaging, Aug., 1959, p. 90.
4. "New Cold-Glued Wrapperless Carton," Modern Packaging, Oct., 1959, p. 124.
5. "Sweden's Leakproof Carton," Modern Packaging, Feb., 1960, p. 88.
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Light-protective glass containers

[*Continued from page 111*]

equipment. On contract, the laboratory developed an entire palette of colors in the brown-green-yellow group, all of which were ultra-violet absorbing. One of these became Gallo's "Flavor-Guard."

As explained by a leading glass technologist, commercial glasses for containers normally screen out certain portions of transmitted light. In varying degrees, wave lengths from 300 to 750 millimicrons are not excluded. Wave lengths from 300 to 400 millimicrons are in the ultra-violet group.

Ultra-violet energy having wave lengths shorter than 320 millimicrons is filtered out by flint glass and is believed to be not harmful to products packed in glass.

Certain materials can, however, be added to the glass to block out the undesirable 300-400 wave lengths: carbon and sulphur for amber; chromium for green.

Technologists have produced ultra-violet-absorbing glasses similar in color to most of the commercially used colored glasses. But the cost factor in many cases makes the development strictly of laboratory interest. For example, an ultra-violet-blocking blue glass has been produced—but it is too expensive for anything but optical use. Flint glass which blocks out 50% of the ultra-violet rays has been produced experimentally by adding a rare earth, cerium oxide. This, too, is expensive—but some interest reportedly has been shown in it by a Belgian perfume manufacturer.

Research for Seven-Up revealed that red bottles offered efficient ultra-violet protection, but were expensive and unacceptable to the sales department of the company for merchandising reasons.

Transparent coatings can also be used on bottles to control light transmission, but these, too, add to the cost of the containers.

Continuing research is producing effective screening colors not believed possible before. The makers of glass-making equipment, obviously, are hoping that special colored glasses combining the advantages of color and ultra-violet absorption will continue to gain prom-

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inence. They point to the growing application of amber glass for milk (according to one source, now 7 to 10% of all milk bottles)—an area where some interest also has been shown in ultra-violet-absorbing green. They also mention possibilities in other food, drug and chemical fields where colors other than protective amber would have greater consumer sales appeal.

"Indeed this looks like a step in the right direction in the drug field," says L. H. Zahn, head of packaging for Ciba Pharmaceutical Products, Inc. "We would like nothing better than to see some colors other than amber, but with the same light-blocking properties. Best of all, we wish we could get clear flint that would block out ultra-violet."

The chief unsolved problem is that of fitting the special requirements into the rigid manufacturing programs of container manufacturers without excessive cost.

Present-day glass tanks produce 100 to 150 tons or more of glass per 24 hrs., although there are special furnaces designed to handle economically loads as small as 30 tons. It is generally necessary to continue a given color for long runs of several months' duration to keep the cost of containers within reason. A change of color requires a complete clean-up and virtual rebuilding of a furnace. Any scattered demand for different colors would necessitate uneconomic changes or costly investment in additional equipment and the price of the resulting containers might be prohibitive.

There are other aspects on the negative side. A comparison of the ultra-violet-absorbing green bottle against a standard emerald green shows the new glass to be slightly yellower than the standard. To some bottlers this is objectionable. According to trade reports, Canada Dry has decided not to change from its traditional emerald-green bottle for ginger ale on the grounds that the yellowish cast of the light-absorbing green imparts a color to the package that does not meet Canada Dry's appearance standards. Furthermore, the company maintains that the caramel syrup in ginger ale helps to filter out damaging light—an argument with which glass technologists agree. There is plenty of evidence, apparently, that certain product ingredients in other fields do their own wave-length screening.

Ultra-violet-absorbing glass may also pose a problem on the packager's production lines. Many firms use infra-red rays for inspection of contents. Some additives that block out ultra-violet also block out infra-red at the other end of the wave band, which would make inspection by present methods impossible.

Despite these obstacles and present reluctance of the glass industry to make predictions, it looks as though the development of light-protective glass has already gone so far that it cannot help having a far-reaching influence on glass packing.

One leading glass-container maker has already reported that its accomplishments so far represent the culmination of almost 10 years of research and testing, involving experiments in excess of 500 crucible melts and more than 55 million bottles made during the test period. From here on, the future undoubtedly depends on the importance that users attach to special light-blocking colors to protect the quality of their products and to assure longer shelf life. ●

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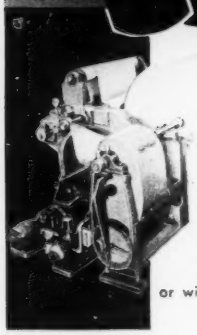

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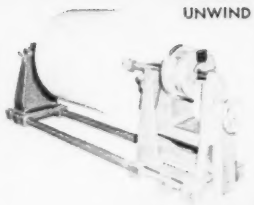

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On this page...

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new ways to make a good packaging set-up a better one

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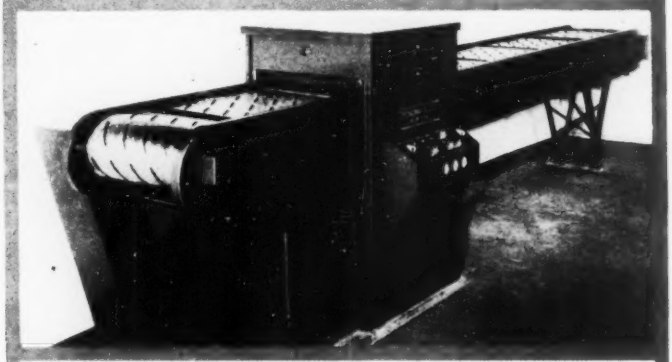

NEW PRESSURE FORMERS. Unique among pressure-forming machines, these Tronomatic models work with all thermoplastic materials. Production speed up to 20 cyc./min. in automated operations. Air-hydraulic power head delivers instant, high-speed force. No need for special plumbing, no "hydraulic" problems. 12" x 22", 24" x 30" and 20" x 24" models, with Tronomatic indexing and trimming equipment optional on the first two and "standard" on the third.

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Sounding board

[*Continued from page 69*]

survey. Du Pont took a survey on a dummy loaf of bread contained in a new package. They made this test on a test market which was similar to our type of business procedure—by a house-to-house canvas. The test involved comparison of wax paper and cellophane wrappers. The test denoted the customers' reactions to these wrappers as well as to other types of packages.

Other test markets are used on a new package to see what size the customer prefers in a wide variety of different sizes. It is important for us to know what sizes are most popular and why these are most popular. It is essential to us in our planning to ascertain those sizes which will best increase our sales volume. Many times an organization will discover that it is using a variety of sizes which is too complete; instead of increasing sales, it is decreasing them because the customer can't decide just which size to buy.

J. D. Young, *General & Sales Manager, J. H. Young Co., Pittsburgh*: A small firm, engaged in compounding and packaging a number of industrial materials including, in this instance, a protective hand cream, we frequently contemplate replacement of basic containers. In this case, the incumbent glass jars, though satisfactory in many ways, were subject to excessive breakage both in transit and in customers' plants. Styrene containers seemed at first to be a good, logical replacement. Light in weight, attractive in appearance and with recent technological advances in the art, they were competitive in price. However, a massive (for us) sampling program failed to support the early promise, as embrittlement on aging resulted in excessive cracking.

In retrospect, comparing our experience with the hand cream with a packaging change on another of our products, testing by trial and error seems less desirable than drawing upon the wider experience of the container suppliers themselves. The second case involved packaging a highly volatile solvent. We have been using a conventional F-style tin container. The problem here is in the closure. An ad in the January issue of MODERN PACKAGING gave us the

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clue which we believe will be a help to us in solving this problem.

Continental Can has introduced a flip-top polyethylene cap for this type of container, which has done very well in in-plant tests and promises to improve eye appeal and usability as well, since it offers color, large filling opening, permanently attached closure and fully lithographed can top in addition to its excellent sealing properties.

E. William Huckestein, *Sales Manager, North Pole, Inc., Pittsburgh:* A test market for a new package is a rarity in our business because ice-cream packaging remains very much standardized. The dictates of our competitors are such that our packages have remained the same for many, many years. The only foreseeable change could be that plastic packaging may enter into our packaging on a large scale at some time in the future.

The only changes in our cartons over the past years have been a change in the color so as to achieve better eye appeal. The only possible way for us to test the effect of our changes in color appeal is by putting the new product into the market and then having our salesman check the results. In our case, we cannot sample with small quantities for a test market of a new package, because we order cartons in huge quantities (around a half-million lot in some cases, for example).

A change in our package is not necessary for another reason. We have a captive market. We don't have to be concerned with setting up an attractive display, as do many other manufacturers, to increase impulse buying of their products. We don't command the floor space that we would like to have from our dealers. Here in Western Pennsylvania the ice-cream manufacturers must supply the dealers with freezer cabinets in most cases. This added expense doesn't allow us an opportunity to experiment with testing a package in a test market. ●

PI seminars on folding cartons, plastic resins

Two special seminars—one on folding cartons, one on plastic resins for packaging—will be conducted this month by the Packaging Institute. Attendance is open to all professional members of PI, plus representatives of corporate members. Registration fee for each of the all-day seminars, including luncheon, is $25 per person.

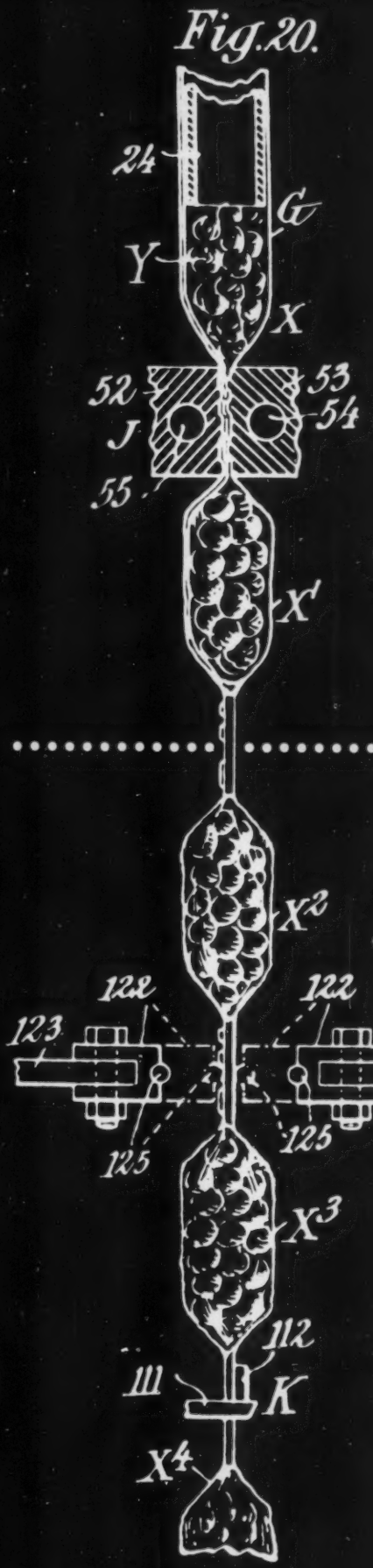
The folding-carton seminar, in the form of a panel discussion, will be held Wednesday, Sept. 14, at the Sheraton-Blackstone Hotel, Chicago, under the sponsorship of PI's Folding Carton Committee. Panel moderator will be Patrick A. Toensmeier of New Haven Board & Carton Co. The panel will be made up of representatives of machinery and materials supplier companies, package users, consultant firms and other persons concerned with the folding carton industry.

The program will be devoted to discussion by the panel of questions submitted in advance of the meeting. PI reports that the seminar will cover such topics as coatings and adhesives, machinery and production-line problems, new materials, plastic-paperboard combinations, marketing of products in folding cartons, the relative merits of folding cartons and other package forms, technical problems and prospects for various cartonboard materials and machinery developments.

The plastic resins seminar will be held Sept. 28 at the Statler Hilton in New York. Panel moderator will be John J. Keville of Ludlow Papers' Plastics Div.

Topics to be discussed at the seminar will include such flexible-packaging components as films, laminations and coatings; injection molding and other techniques for the production of rigid plastic containers; the use of resins in adhesives; problems in the processing and application of resins, and the use of new resins with properties of resistance to heat, moisture and chemicals. PI also anticipates discussion of many questions prompted by Food Additives Amendment to the Federal Food, Drug & Cosmetic Act.

Persons interested in attending either or both of these seminars are requested to submit questions in writing to PI headquarters. All questions, plus requests for professional-membership application forms and seminar registration details, should be directed to Mr. Penn, c/o Packaging Institute, 342 Madison Ave., New York 17. ●



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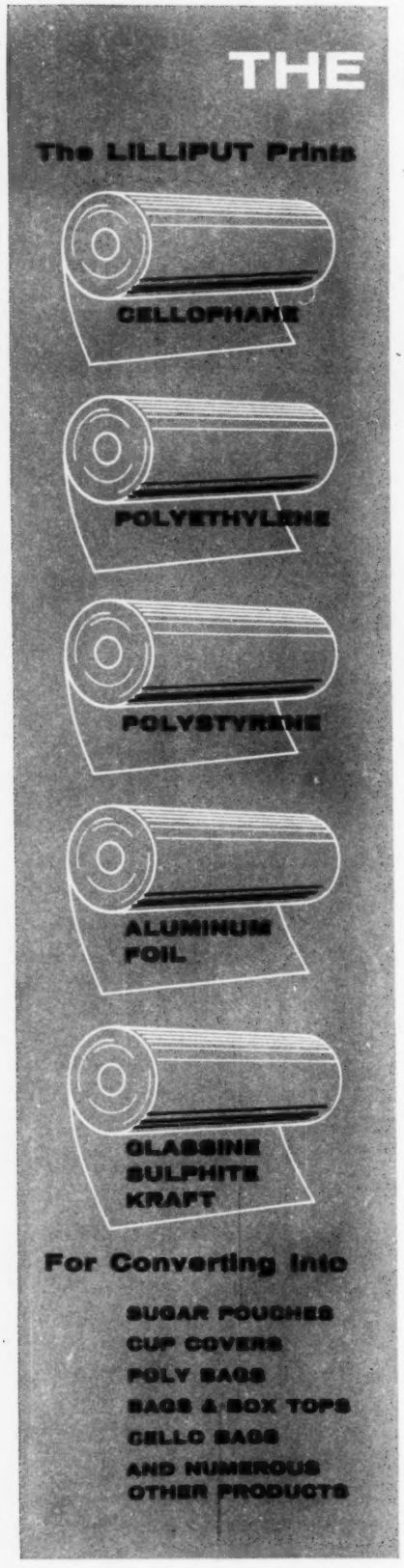

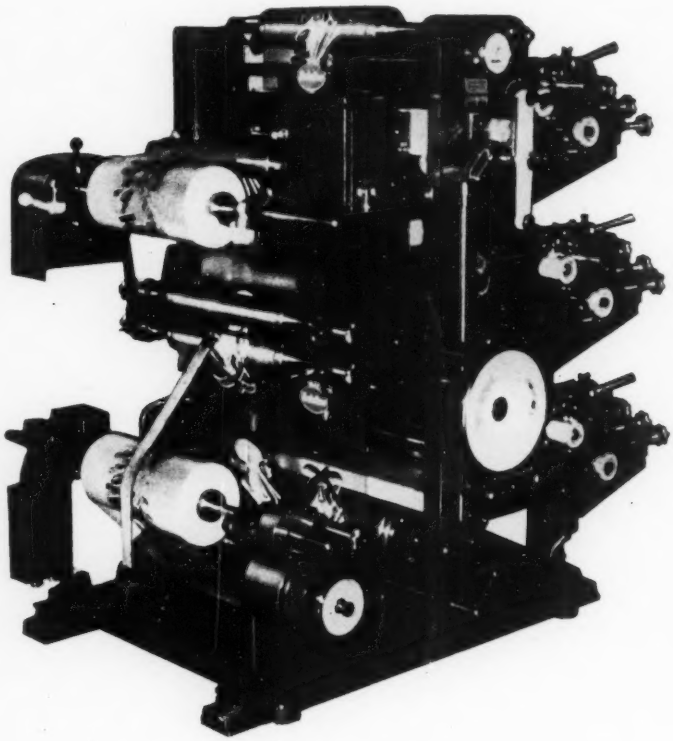

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GENERATORS. 4-page folder on a line of packaged nitrogen atmosphere generators. Included are typical installation features and a comprehensive flow chart. For use in food packaging, refining, metallurgy and storage. Gas Atmospheres, Inc., (I-051)

STRAPPING TOOLS. 4-page folder illustrates 12 models. A specification chart lists typical applications for each of four electric-powered tools and 8 air-powered models. Signode Steel Strapping Co. (I-052)

PILERS AND LIFT TABLES. 16 pages of information on cutter pilers, overhanging pilers and standard lift tables. Specifications and illustrations in addition to applications and a description of piler accessories. The Clark-Aiken Co. (I-053)

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MOUNTINGS. 8-page illustrated guide to a right bonded rubber mounting or flexible mounting system by this manufacturer of vibration, shock and noise control equipment. General design, applications and performance data detailed. Lord Mfg. Co. (I-057)

PACKAGING MACHINERY. 6-page folder describes services of company that specializes in designing and manufacturing special packaging machines high speed tape application equipment and related devices. Uses "wrap around" principle in design. Metro Tool & Engineering Corp. (I-058)

CARTON SET-UP MACHINES. 4-page folder describes and illustrates line of set-up and closing machines to handle cartons as large as 14" wide by 8" deep and as small as 2" wide by 5/16" deep automatically. No limit on carton height. Thiele Packaging Machinery Co. (I-059)

GRAVURE AND LETTERPRESS. 16-page illustrated book points out the advantages of gravure and letterpress as used especially in the packaging field. Examples of this company's work. Strawberry Hill Press, Inc. (I-060)

RECORDERS AND TOTALIZERS. 25 illustrated pages on electronic batch counters, transistorized amplifiers, miniaturized photo cells, print-out recorders, packaging controls, 2-channel time recorders and tally counters. Standard Instrument Corp. (I-061)

COUNTING AND MARKING SYSTEMS. 37 pages of information on an automatic counter and tab marking system for the paper, film and foil converting industries. Completely electrical. Infinite count selection with a push-button count corrector. Illustrated. Miller Lauffer Equipment Corp. (I-062)

FOIL PAPERS. Book includes 59 samples of embossed and printed "magnetic" foil papers. In shiny and satin finishes, one and two colors. Prices. Matthias Paper Corp. (I-063)

AIR PRESSES. 4-page brochure describes a line of single acting air presses for use in punching, swaging, staking, upsetting and imprinting. Diaphragm-type frictionless cylinder. Press sizes range from ¼ to 2 ton capacities (at 85 psi) each with a choice of 6 control systems. Niagara Machine & Tool Works. (I-064)

VERTICAL CONVEYOR. 4-page folder offers information on a new self-loading continuous vertical conveyor. Schematic diagrams, applications and advantages detailed. Standard Conveyor Co. (I-065)

CORRUGATED MATERIALS. 4-page folder outlines uses of single face corrugated material as both an internal and external protective packaging wrap. Also included is a table of standard stock combinations as well as data on typical applications. Sherman Paper Products Corp. (I-066)

SELLING APPAREL TO AND IN FOOD STORES. 35-page booklet analyses apparel sales potential in 280,500 retail food stores, supermarkets, etc. American Can Co. (I-067)

POLYESTER RESIN. 2-page reprint from February 1960 MODERN PLASTICS Magazine discusses how one reinforced plastics boat manufacturer increased boat production 40% in the same plant space and reduced resin requirements by 10% and labor requirements by 25% . . . by use of a new resin and a spray-gun system. Naugatuck Chemical, Div. of United States Rubber Co. (I-068)

FLUID FLOW RATE ALARMS. 4-page illustrated brochure offers information and examples on rotameter accessories to provide signalling and simple control functions. Specifications listed. Brooks Rotameter Co. (I-069)

PAPER TUBES AND CORES. 10-page brochure offers information on manufacture of spiral wound paper tubes and cores, some of their uses and specialty items. J. C. Baxter Co. (I-070)

MOTORS AND GENERATORS. 8-page motor selector offers a reference guide for a line of motors and generators. AC motors range from 1/40 to 300 hp. and include a broad range of voltages, speeds, mountings and enclosures. Howell Electric Motors Co. (I-071)

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WEB GUIDE EQUIPMENT. Six page fold-out describes a series of components for unwinding, intermediate guiding operations and rewinding. Both hydraulic and vacuum principle guides are noted. Illustrated. Stanford Engineering Co. (I-072)

PACKAGING ADHESIVES. 12-page illustrated brochure details this company's line of industrial adhesives. Thumbnail description of adhesives for top and bottom sealing, multiple unit packaging, folding cartons, etc. Swift and Co. (I-073)

WRAPPERS. 4-page folder describes an automatic wrapping machine. A cut-away view of basic machine shows how wrapper is tube formed around product, then simultaneously crimps, cuts, heats or glue seals, folds and delivers. Uses all types of wrap materials. Hudson-Sharp Machine Co. (I-074)

HANDPRINTERS. 6-page fold out describes company's line of marking and addressing systems that includes both handprinters and label printing machines. For general office, production, shipping and receiving, tool room and inspection facilities. Illustrated. Weber Marking Systems Inc. (I-075)

FIBER BOARD. 8-page folder details advantages and uses of industrial fiber board. Typical applications include skids, air conditioning, food service equipment, cold storage doors, metal cabinets, metal partitions, others. The Celotex Corp. (I-076)

TIN. 18-page profusely illustrated booklet offers information on the role of tin in American industry. Comprehensive charts on its applications and uses as well as data on tin mining in Malaya are revealed. Malayan Tin Bureau. (I-077)

PACKAGING MACHINERY. 8-page illustrated folder describes 2 basic packaging machines available with any of the following feeds: net weight scales, liquid pump, auger or volumetric and automatic elevator. Specifications and accessories noted. Hayssen Mfg. Co. (I-078)

SPEED MEASUREMENT. 16-page catalog describes a speed indicating system that combines a d-c tachometer generator with a 4½" panel-mounted meter to give full scale speed indications ranging from 100 to as high as 12,000 rpm. The generator and indicator are connected by a low voltage cable that can be as long as 500 feet. Servo-Tek Products Co., Inc. (I-079)

PLASTIC PROTECTORS. 16-page booklet on complete line of plug and cap protectors for machine screw-threads, plug protectors for pipe threads, cap protectors for tubing and propeller shaft threads. S. S. White, Plastics Div. (I-080)

SPECIALTY PAPERS. 4-page folder describes specialty papers for industry made from natural, synthetic and glass fibers. Elements discussed are porosity, controlled thickness, strength, softness, heat sealability, heat resistance, coverage, elasticity and filtration efficiency as well as color. C. H. Dexter & Sons, Inc. (I-081)

PRINTING EQUIPMENT. A series of 4-page folders on this company's line, for uneven surface printing. Application and technical specification for these and also for a series of flatbed printing-machines. International Eastern. (I-082)

CAN CLOSING MACHINES. 12-page publication describes complete line of open top, oblong and pear shaped meat cans and can closing machines. Sixty sizes are discussed in terms of shapes, sizes, shipping weights and volumes. Specifications. Continental Can Co. (I-083)

AEROSOL SYSTEMS. Two booklets totaling 14 pages on instrumentation for the measurement of aerosol particulates. The first is an abstract of the experimental section of a thesis while the second is a paper delivered before the Society of Cosmetic Chemists. Aerosol Techniques, Inc. (I-084)

INDUSTRIAL PROTEINS. 40-page booklet discusses an alcohol-soluble protein and a mild aqueous alkali dispersible protein. Nature and properties, solubility and compatability, formulas and preparation methods detailed. Present and projected uses invoke pharmaceuticals, food, and paper coatings, paints, inks, varnishes, floor finishes and release coatings, among others. Film forming, binding and adhesive characteristics discussed. Corn Products Sales Co., Corn Products Div. (I-085)

LIFT TRUCKS. 4-page illustrated folder describes line of power and hand lift trucks that include portable and fixed elevators, cranes, barrel and carboy dumpers, die tables, turn tables, skids and other materials handling equipment. Revolvator Co. (I-086)

CODING AND PRINTING ATTACHMENTS. 4-page folder shows applications of printing and coding machinery designed for installation on packaging machinery conveyor lines, case sealers and other processing equipment. Bell-Mark Corp. (I-087)

LABELS AND DISPENSERS. 6 pages of information on a line of pressure sensitive contact labels. Also information on both contact manual and automatic label dispensers. Specifications. Archer Label Co. (I-088)

BAG CLOSER. 18 pages of information on a line of portable bag closers plus these accessory items: suspension units, carriage conveyor units, tape binding attachments and Vee bases. Prices. Dave Fischbein Co. (I-089)

PACKAGING MACHINERY. 6-page illustrated fold out describes fully automatic packaging machine capable of handling liquid or dry packets up to 8" x 8½". Advantages detailed. Brown Filling Machine Co., Inc. (I-090)

SPRAY MACHINE. 2-page illustrated bulletin on an air operated automatic single spindle rotary spraying machine with vertical traveling guns for finishing cylindrical and rectangular parts. Also available with mask washer and spray booth. Confronting Matrix Corp. (I-091)

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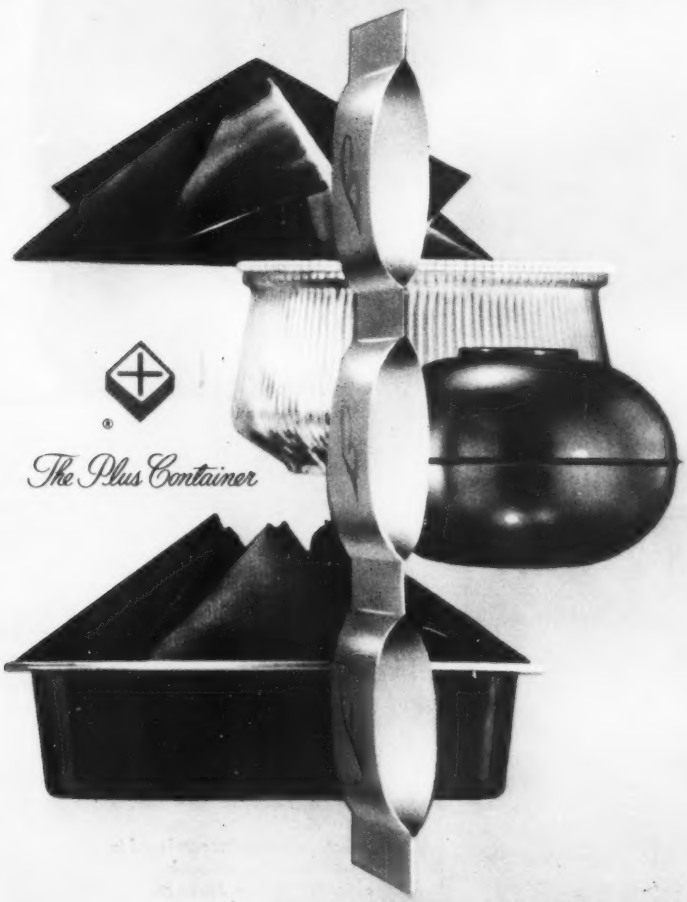

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Minute Maid uses aluminum, tests easy-open can

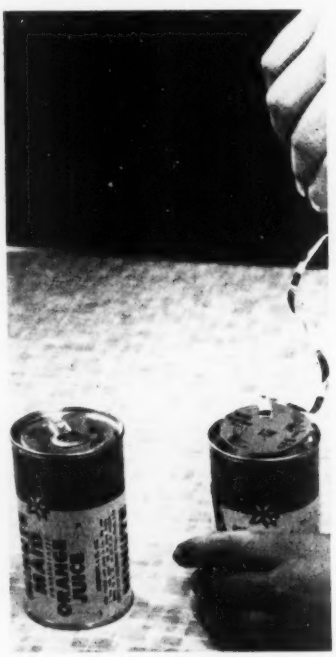
Announcement by the Minute Maid Corp., Orlando, that it will pack its 6-oz. size of citrus juices in aluminum cans next year fulfills expectations that this major processor would follow its recent tests of the container* with the first full-scale commercial application of aluminum in the citrus-concentrate industry. At the same time, it appears that Minute Maid will be the first to use the long-rumored tear-off aluminum lid, applying it to a foil-paperboard body (see photo below).

In the first instance, an estimated 50,000,000 three-piece all-aluminum cans will be formed on modified can-assembling machinery to be installed at Minute Maid's Auburndale, Fla., plant where the three-week test of 6,500,000 cans was run earlier this year. At that time, the cans were fabricated from palletized pre-printed, pre-cut components run through portable can-making equipment operating in two huge trailer vans parked outside the plant and feeding into the regular filling lines. Now, integrated equipment will be housed permanently in the same area. The only other change involves delivery of can bodies 40-up on sheets which are to be cut apart by Minute Maid.

Since the can-assembling equipment runs at only 450 units per minute compared with a 600-to-700-per-minute rate for the filling line, this lag will be overcome by can assembly in advance and during down time on the filling line. Although frozen concentrated orange juice will be the principal product packed in the new cans, about a dozen other fruit juices and ades also will be run on the line. Minute Maid reports its 1960-61 use of aluminum will exceed that of any citrus-concentrate company in any comparable packing year. Sizes other than the 6 oz. will be packed in the standard tinplate type of container.

A principal advantage of the new can, Minute Maid points out, is a freight cost reduction averaging $1 per thousand cans in national distribution. This is accounted for by the fact that unfilled aluminum containers are one-third the weight of comparable tinplate cans and so weigh 2.7 lbs. less per 18 cans.

*See "Minute Maid Tests Aluminum, Adopts New Design," MODERN PACKAGING, July, 1960, p. 211.



Tear-off lid of aluminum applied to foil-paperboard body of new 6-oz. can of Minute Maid frozen concentrated orange juice is being test marketed in Providence, R. I. Device, with printed instructions on lid, starts with aluminum tab welded to lid and on removal, leaves a safe, clean edge.

Easy-opening container

The Minute Maid Corp. also confirms reports that it is now test marketing, also for use with its 6-oz. size of frozen concentrated orange juice, a lap-seam foil-paperboard-foil-body container with aluminum ends and a convenient tear-out lid that, it is predicted, will outdate the can opener.

An aluminum tab welded at one end to the lid and leading to a thin, scored strip of aluminum around the circumference of the lid provides the easy-opening feature. The consumer simply lifts the tab, grips it through a loop opening and, following directions incorporated in the lid, tears the aluminum strip away and lifts off the can top, which leaves a safe, smooth, clean-edged container that, it is suggested, can be used by the consumer for drinking purposes.

Cost of the new container is said to be the same as that of the all-aluminum can and less than that of tinplate cans, though there is some

What's NEW under the sun... in aerosols?

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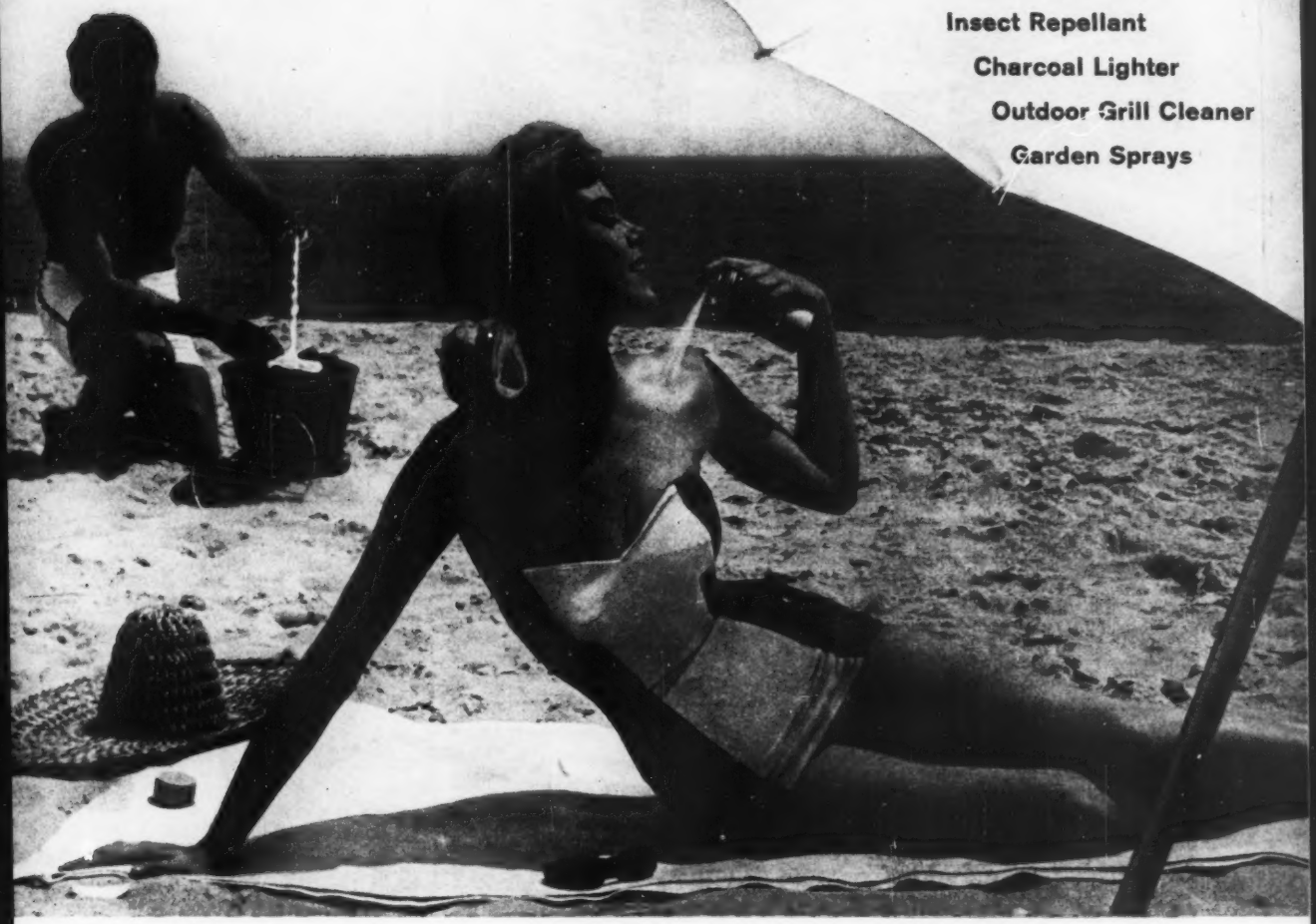

How the magic touch of aerosol packaging skyrockets sales!

Wherever you go this summer, you'll find more and more aerosol products increasing people's enjoyment of outdoor living.

Use of aerosol garden sprays is at an all time high. Demand for aerosol insect repellants is growing like Topsy. Spray-on sun tan lotions are gaining increased popularity. And so are the many newer types of aerosol products such as charcoal lighter and outdoor grill cleaner.

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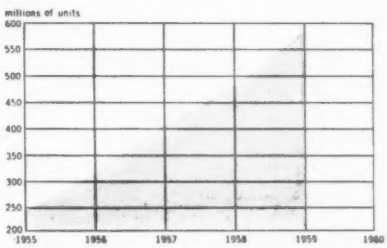

Sales of aerosol products have grown 135%* in the last 5 years!

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added expense in the opening device. Final cost comparisons await completion of test runs and test marketing, now under way in Providence, R. I., where an independent research organization is checking public reaction with the use of a consumer panel. Formed containers were delivered to Minute Maid's Plymouth, Fla., plant for filling and lidding on standard equipment.

SUPPLIES AND SERVICES: Aluminum can components by Reynolds Metals, Richmond 18, Va., assembled by Minute Maid on equipment made by Baldwin-Lima-Hamilton, Philadelphia, and modified by Reynolds. Aluminum-end foil-paperboard-foil "Safe Pack" can, including easy-opening top, by Aluminum Co. of America, Pittsburgh 19, and United Shoe Machinery, Boston 7. ●

West breaks records

Despite an unusual heat wave that shot city temperatures above 100 deg., the Western Packaging & Materials Handling Exposition in Los Angeles (July 19-21) lived up to its advance billing by setting new records in numbers of exhibitors and in visitors. Also, as usual, it served to highlight regional packaging developments while simultaneously displaying for Western packaging men many significant trends already observed and reported in the East.

Because of the regional character of this show at the Pan Pacific Auditorium, many exhibitors keyed their displays to the particular interests of Western packagers of food, produce, chemicals, and aircraft and missile components. The show reflected once again the current advances in plastics for packaging, as well as pointing up great variety and versatility in applications of longer-established materials, plus new or modified machinery for handling either plastics or non-plastics materials in a broad range of package constructions.

This eighth biennial Western show broke the records set four years ago in the same city. Compared with 8,600 visitors then, 10,200 registered this year, according to Clapp & Poliak, Inc., manager and sponsor of the event. And against 148 exhibitors in Los Angeles in 1956, a new high of 173 participated in the show this year.

Concurrently, a Western Packaging Assn. breakfast meeting drew 300 guests to a slide-film talk by

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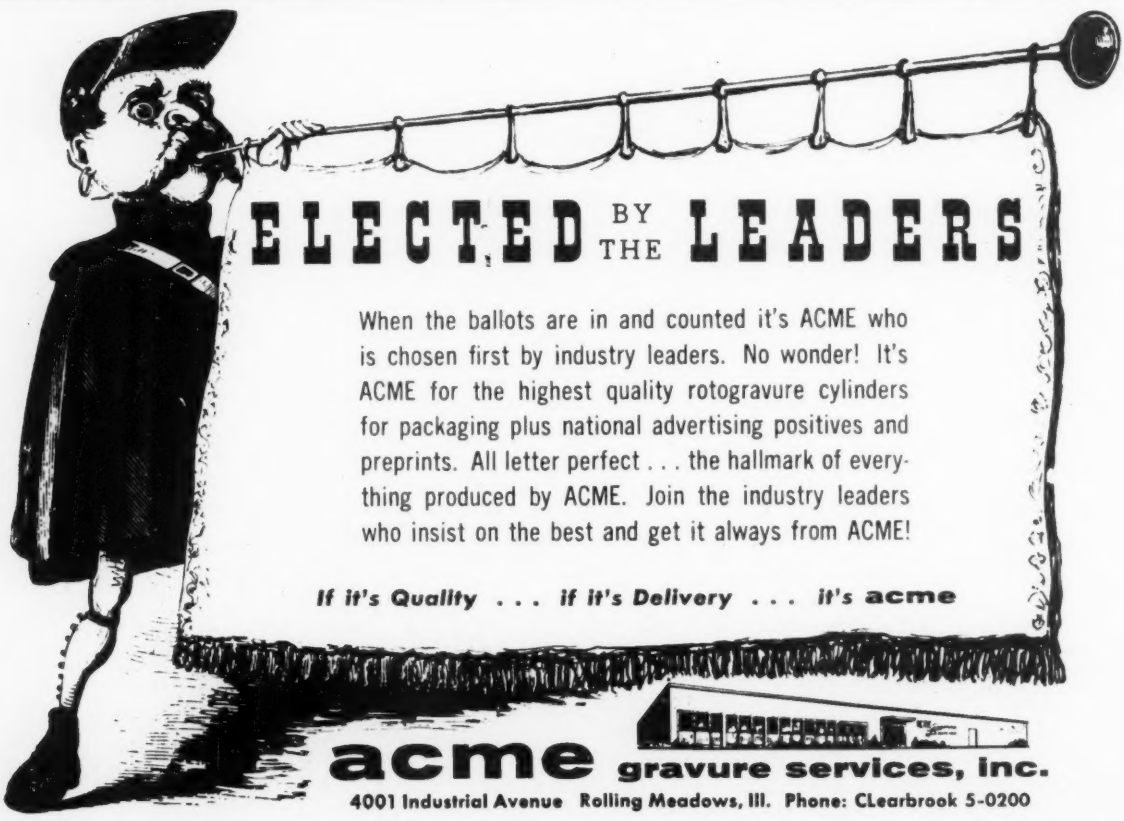

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Roy King, editor of *Food Field Reporter* and *Food Topics*, on "The Supermarket Speaks—Why Do You Make It So Tough for Us to Sell Your Product?" He was introduced by Nicholas A. Cooke of Kaiser Aluminum, chairman of the association's educational and research committee. Ralph C. Woerz of Morningstar-Paisley of California, Inc., president of WPA, is being succeeded in that office by Alden G. Reed of the Nashua Corp., San Francisco.

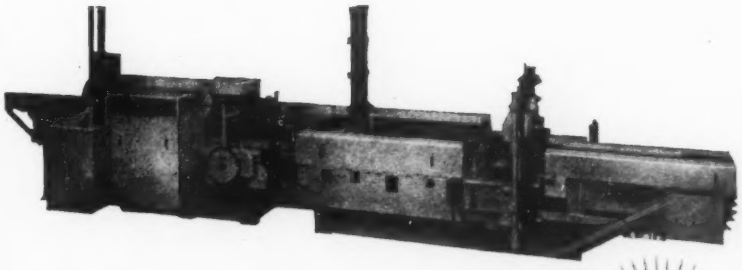
A significant broadening of Packaging Institute activities was worked out during the show when PI staged a luncheon meeting under the guidance of C. Paul Bolton of the Carnation Research Laboratories, Van Nuys, Calif., and Richard Walsh, PI's membership director. Mr. Bolton is director of the Packaging Institute's West Coast activities.

L. J. Hayhurst of National Dairy Products, representing PI President Charles W. Kaufman, also of National Dairy Products, announced plans for a series of Western regional meetings starting in October at the Roger Young Auditorium, Los Angeles. The initial subject of these all-day seminars for the general membership will be shipping containers. Plans call for a second session in San Francisco in January, probably on the subject of flexible packaging materials.

Two area chairmen appointed to expedite information and meetings for Western packaging men are D. E. G. Glassco, senior packaging engineer of Purex Corp., Ltd., South Gate, Calif., the Los Angeles chairman, and Orville R. Johnson, manager of product development for Crown Zellerbach Corp.'s Western-Waxide Div., San Leandro, the San Francisco chairman.

Also during the show, 60 West Coast converters attended a regional meeting and dinner of the National Flexible Packaging Assn., addressed by NFPA's president, E. S. Elgin, vice president of Chase Bag Co., and membership committee chairman Harry M. Hanson, president of Kennedy Car Liner & Bag Co. Slides of the association's recent competition winners were shown, with explanatory comments by NFPA executive secretary, John M. Cowan.

The ninth Western Packaging & Materials Handling Exposition will be held July 17-19, 1962 at San Francisco's Civic Auditorium. ●



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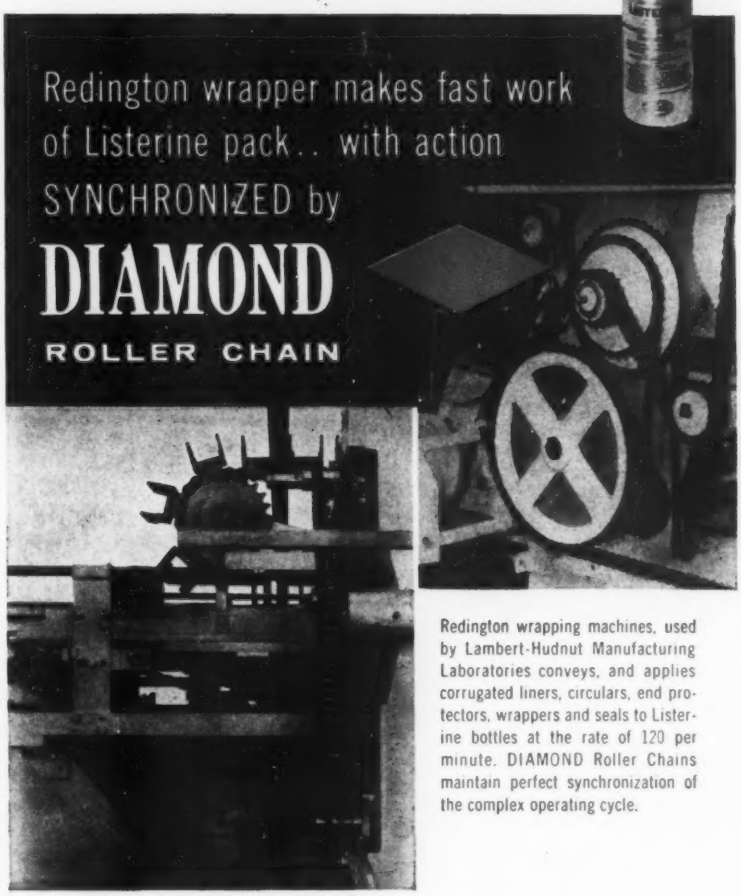

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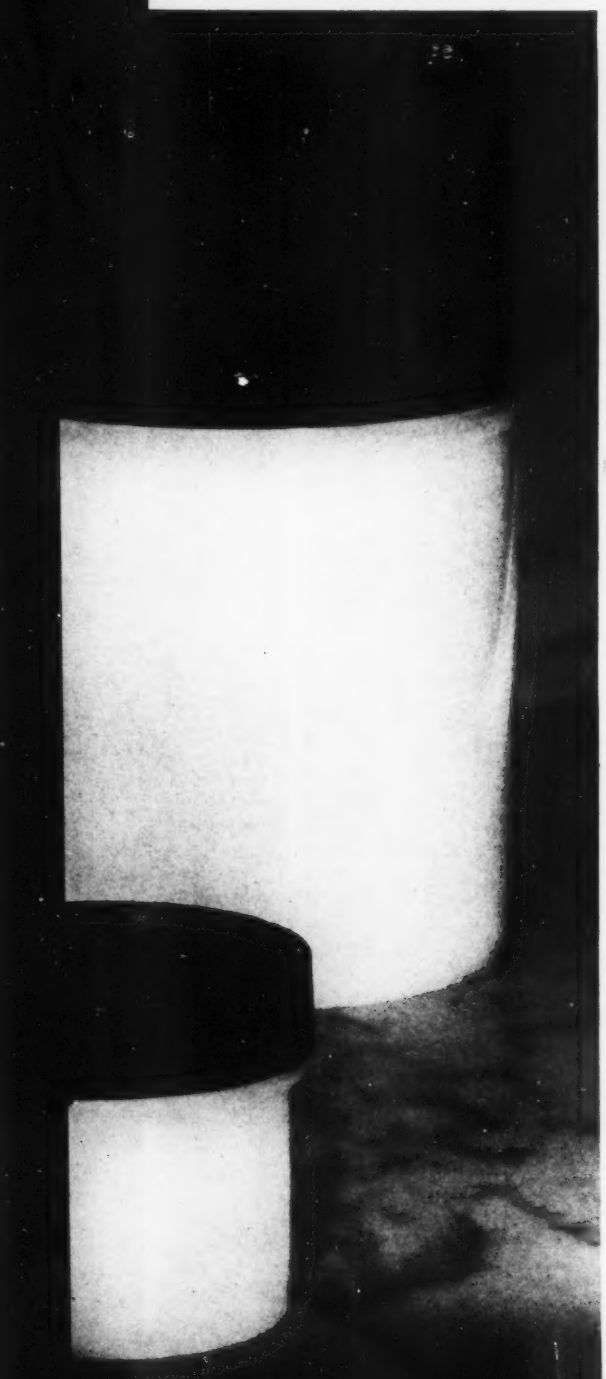

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Notice the gloss on these jars—a fine, clear finish that stops shoppers, rivalling the caps of phenolic plastic or enameled metal. It's just one of the obvious advantages of BAKELITE Brand high-density polyethylene. The jars are firm and rigid, too. They're resistant to chemicals, oil, and grease. They save shipping costs because they're so light in weight—only ⅛ the weight of glass. And they won't break.

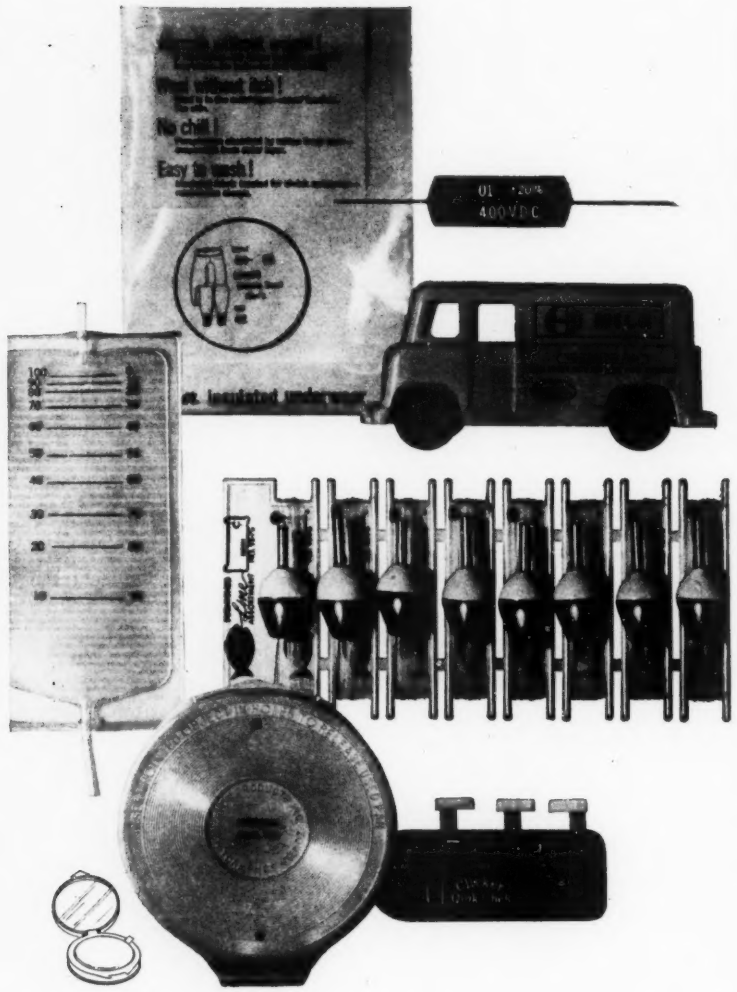
Just about every type of molded package can be made of high-density polyethylene and get these benefits. What's more, this material will stand up under steam sterilization. Like all polyethylenes, it comes in a full range of attractive colors. When you plan a new package, use high-density polyethylene and get one that's right from the start.

You can get the best plastic package for your needs when you have the widest selection of materials to draw from. Union Carbide Plastics Company offers the greatest range of packaging plastics available today, each formulation engineered for a definite set of end-use characteristics. Learn about them by writing Dept. DA-86, Union Carbide Plastics Company, Division of Union Carbide Corporation, 30 East 42nd Street, New York 17, N.Y. *In Canada:* Union Carbide Canada Limited, Toronto 7.

Stock jars made by Celluplastic Corp., Newark, N.J., are molded of BAKELITE Brand high-density polyethylene DMD-7000. Their finish is notable for its gloss. They can be multicolor printed.

UNION CARBIDE

"Bakelite" and "Union Carbide" are registered trade marks of Union Carbide Corporation.



No doubt about their identification and decoration

—*it stops the eye, tells the story, helps the sale.* This is marking *everybody* can read—made by Markem machines and printing elements. And perhaps most important, the Markem *specialty inks* used have just the right combination of opacity, color, adhesion and drying speed each type of plastic requires.

This is the "Markem method" that can be working for you—the *right* machine, type and ink to do *your* particular marking job quickly, clearly and at low cost, in your own plant. It *stays* clear and attractive because it stays *on* your product and can't fall off or easily smudge. Call your Markem representative for complete facts, or write Markem Machine Co., Keene 1, N. H.

MARKEM

EVERYTHING INDUSTRY NEEDS . . . FOR PROFITABLE MARKING . . . SINCE 1911

22nd PI Forum

Under the theme "Packaging for the '60s," the Packaging Institute's 22nd annual National Packaging Forum comes to the Statler Hilton Hotel, New York, Oct. 31-Nov. 2.

Again this year, three concurrent seminars will be held on each of the three days of the forum. All-day sessions are scheduled for Tuesday, the second day of the program. Chairman of the forum is Roy W. Abling of Merck Sharpe & Dohme.

First order of business Monday morning will be PI's annual meeting and election of officers. This is to be followed by a *Life* magazine presentation on "Packaging Potentials for the '60s."

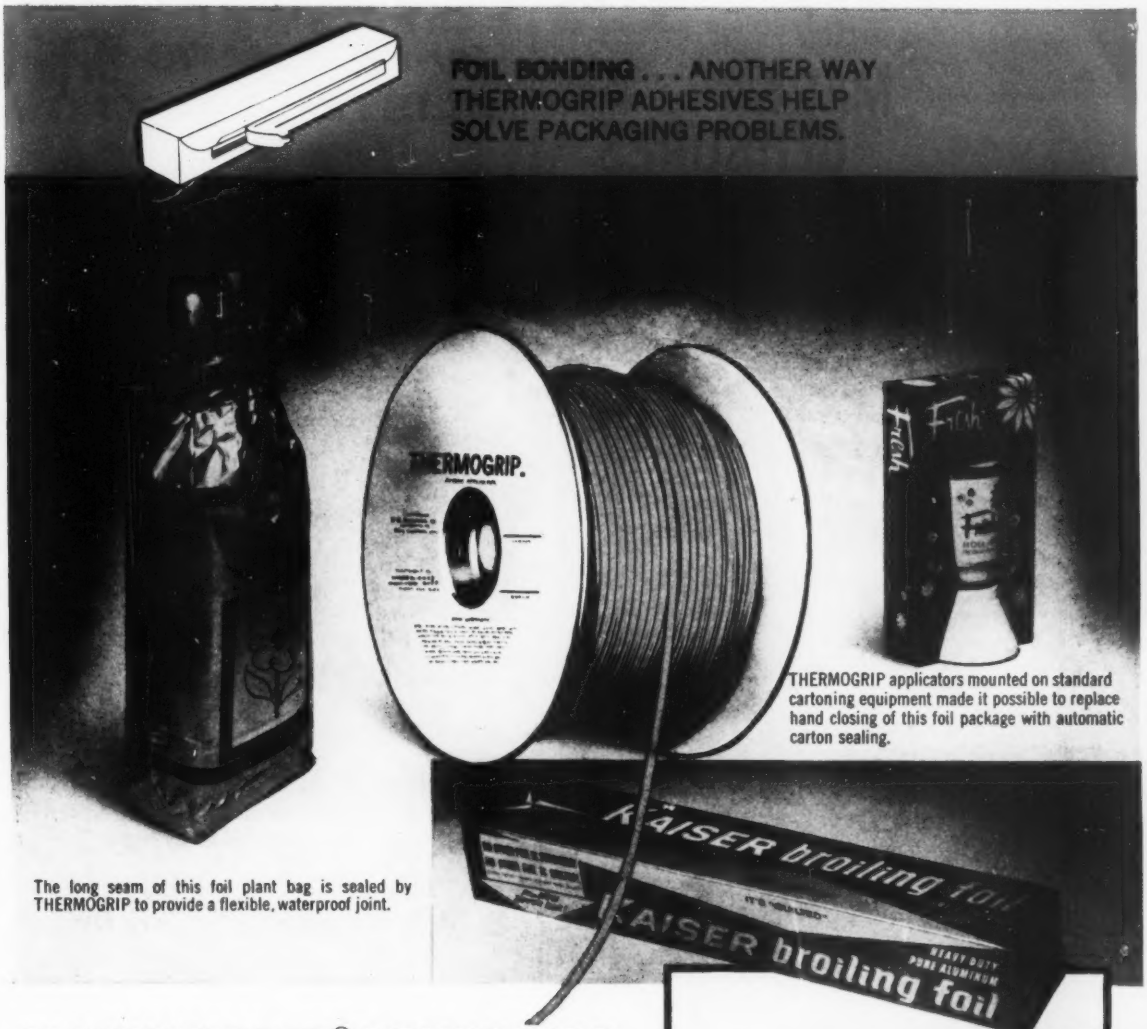
Monday afternoon seminars will deal with packaging for self service, packaging research and development, and corrugated and fibreboard materials. Tuesday's all-day seminars, divided into morning and afternoon sessions, will cover drug and pharmaceutical packaging, production line and machinery, and package printing. Wednesday morning's three seminars will discuss flexible packaging and plastics, food packaging and closures.

Following the Wednesday seminars, PI's Petroleum Packaging Committee will hold an open meeting, at which five experts will discuss recent packaging trends and developments.

PI's annual awards dinner, featuring a guest speaker, will be held Tuesday night. At the dinner, PI will present its fourth annual Professional Award for individual accomplishment in packaging and its 1960 Corporate Award, presented for outstanding advancement in applied packaging.

Daily, all-inclusive registration rates for PI members are $25 each for Monday and Tuesday, and $18 for Wednesday. The non-member fee is $35 each for the first two days and $30 for Wednesday. Three-day combination rates are $65 for members and $95 for non-members. PI points out that each daily registration is transferable and includes luncheon admission. The bearer is permitted to attend as many sessions as he is able to during each daily schedule.

Advance registration for the forum can be made by writing to the Packaging Institute, 342 Madison Ave., New York 17. ●



THERMOGRIP applicators mounted on standard cartoning equipment made it possible to replace hand closing of this foil package with automatic carton sealing.

The long seam of this foil plant bag is sealed by THERMOGRIP to provide a flexible, waterproof joint.

THERMOGRIP® ADHESIVES
Bond Foil at Higher Speeds

THERMOGRIP adhesives provide instant bonds on foil. There is no waiting for drying of the adhesive; pressure stations are eliminated, and machines can be operated at higher speeds. The simple design of the applicator and adhesive system makes installation easy on many types of packaging and converting machines. Glue pot cleaning is eliminated.

THERMOGRIP adhesives can be applied at top machine speeds in dots, dashes or continuous bands in a variety of widths. In addition to foil, plain boards, waxed boards, porous paper, polyethylene and many other materials are readily bonded.

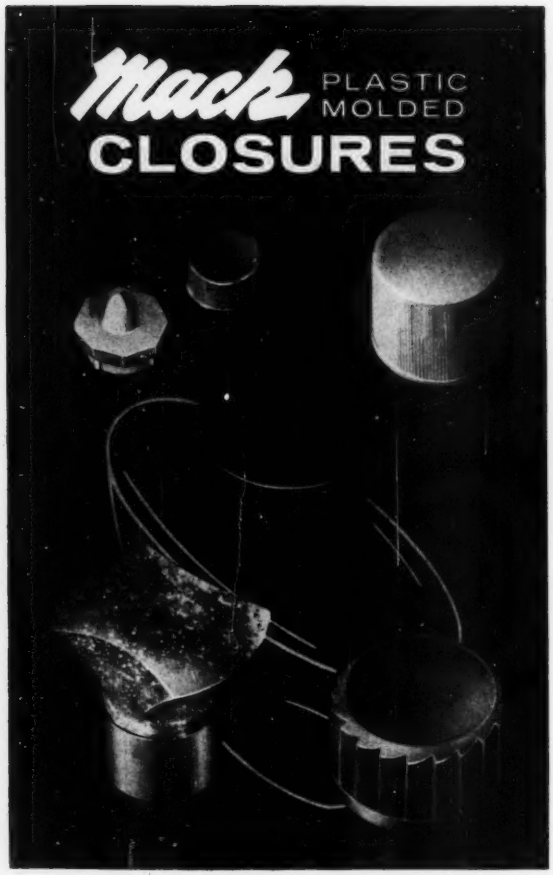
If you are interested in clean, dry, high-speed sealing send us samples of your packages or product. Write us explaining your sealing objectives.

THERMOGRIP adhesive made possible faster production, surer bonds and better performance of this new tear strip Kaiser Foil package.

United

UNITED SHOE MACHINERY CORP.
140 Federal Street, Boston, Mass.
Liberty 2-9100

MACK CLOSURES CLOSE SALES!



Creative styling makes available a wide selection of distinctive designs for all types of packaging...including aerosol dispensers, tubes and detergents. Call or write for samples on standard closures or suggestions on your particular "dress-up" packages.

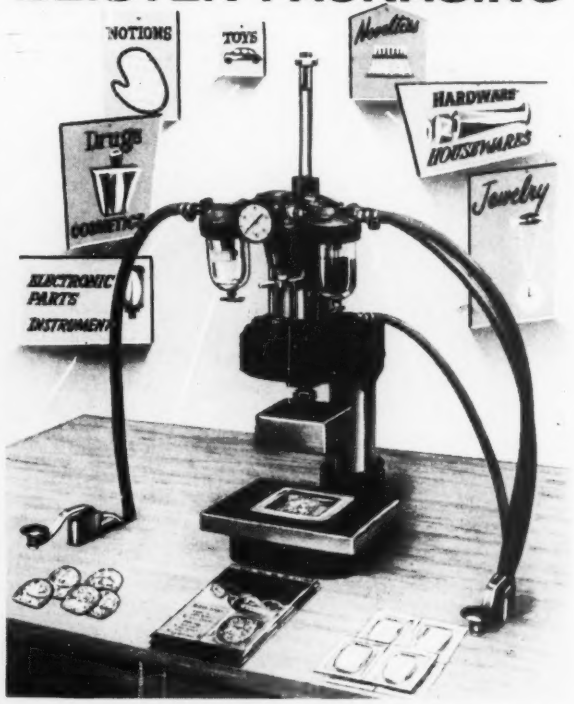
MACK MOLDING COMPANY • INC

WAYNE, NEW JERSEY

Serving the Packaging Industry Since 1920

Other plants located in Arlington, Vermont and Waterloo, Quebec, Can.

NEW HORIZONS for AUTOMATIC STIK-ON BLISTER PACKAGING



NOW MASS PRODUCED with Jackmeyer's New 'KOLDSEAL' High Speed MACHINE

Available in single or multiple units, the 'KOLDSEAL' air press meets the growing demand for equipment to mass produce Jackmeyer STIK-ON Blister Packages. This new packaging advance completely eliminates heat and high pressure from the sealing process and opens new horizons for profitable application of STIK-ON to practically any type of product.... even delicate and sensitive instruments.

SUPERIOR ADVANTAGES OF 'KOLDSEAL' AUTOMATIC STIK-ON PROCESS

- **Seals without heat, eliminating possible curling and warping of card.**
- **Permanent adhesive bonds both card and blister.**
- **Provides airtight protection from dust and moisture indefinitely.**
- **Uses a minimum amount of input pressure.**
- **Safely packages sensitive instruments, delicate parts and products.**
- **Assemble economically and efficiently in your own plant . . . saves time and handling.**
- **'KOLDSEAL' MACHINES cost considerably less than other sealing equipment.**
- **Easy to build, 'Do-It-Yourself' Jigs.**

Look to JACKMEYER for More "SEE and SELL" in every type of Blister Packaging. Every step quality controlled from Creative Design, Forming of Blister, Printing, Coating and Assembly from 1 dependable source at minimum cost.

FREE! BLISTER PACKAGING 'FACT BOOK'. A complete and informative presentation of Blister Packaging. Send today Dept. MP-9.

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SPECIALISTS IN • Labels • Tags • Display Packaging • Heat Seal Printing • Vacuum Forming • Printing on Mylar • Vinyl • Styrene • Acetate • Foils • Paper • Board

A Complete Service from Creative Art to Finished Product – Since 1918

The trend to tray stocking is found to be gaining momentum

[*Continued from page 105*]

case-loading equipment or at least expensive modifications.

Both food chains and packagers must be realistic in dealing with tray-stocking demands. If packagers refuse to adjust to the new order, they could be left by the wayside. On the other hand, an intramural battle may be brewing between food-chain merchandisers and store operating personnel. Merchandising people are loathe to drop a single item that can impel a sale; operations people, in the first excitement of tray-stocking efficiency and cost reduction, may forget what gave supermarkets their great appeal in the first place—wide product selection. One of the disadvantages of tray stocking is that it is somewhat less flexible.

In summary, these appear to be the current high spots of the tray-stocking development:

For *packagers:*

1. If nothing else, they will be forced to print their shipping containers to suit tray stocking. Some will have to add either tear tapes or protective pads to the container.

2. National-brand packagers may have to move quickly because they can expect even more competition from private brands whose packaging the tray-stocking chains can control and from other national brands that have made the adjustment to tray stocking at an earlier date or in better manner.

3. More food-industry liaison and cooperation in regard to packaging is imperative. Otherwise a lack of uniformity in packaging changes motivated by tray stocking can turn the supermarket into a jungle. Yet at the same time, packagers must achieve individual distinction within this uniform framework—no easy job of achievement.

4. Label redesign will be necessary for many cans, jars and cartons because all significant design components must be raised above the level of the tray lip. Also, wrap-around labeling appears needed so that containers look good—and sell—from any angle.

5. Packagers must review the wisdom of reducing case sizes and number of facings for their slower-moving items. If the packagers don't cooperate realistically, their products could very well be forced off the shelves.

6. Not here yet, but discussed as a definite likelihood, is the installation of frigid-air curtains in supermarkets as substitutes for the present horizontal freezer chests. Obviously if frozen foods are stacked in trays on shelves like other merchandise, the packaging pattern which has evolved for these products must be modified.

7. On the plus side, it has already been proved that good tray-stocking packages can expand distribution and garner more display space for the manufacturer. And product identification and stock rotation are very much improved—factors which make for better quality assurance and more repeat sales.

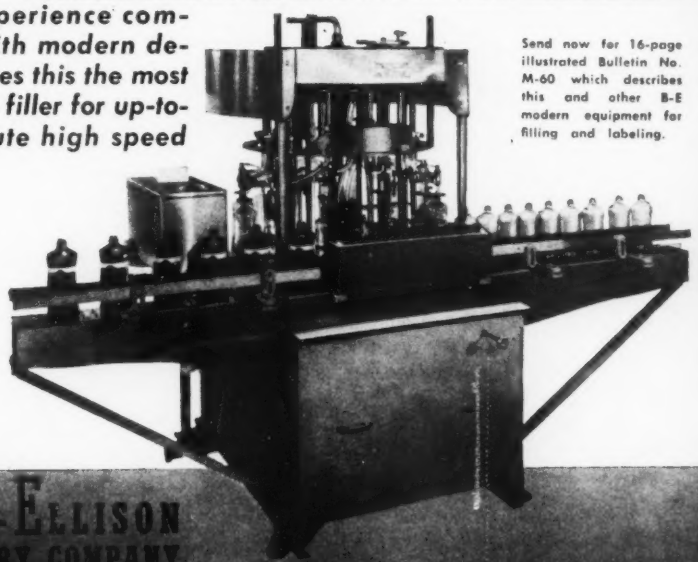
For *retailers:*

1. Widespread packager cooperation in the tray-stocking movement can make this new method even more profitable through labor savings and increased sales.

2. Inventory control is made much

The B-E ROTARY FILLER

• *Long experience combined with modern design makes this the most desirable filler for up-to-the-minute high speed filling.*



Send now for 16-page illustrated Bulletin No. M-60 which describes this and other B-E modern equipment for filling and labeling.

- Made in the following sizes: 8, 12, 16, 18, 20, 24, 25, 30, 45 TUBES
- All stainless steel contact parts
- No open exposed supply tank
- Tube registration with bottle opening as reliable as the meshing of mating gears
- Minimum changeover time
- Instant speed variation
- Speeds up to 200 per minute
- Where constant high speed vacuum filling is desired, the B-E Filler is a must
- We can supply a machine tailored to your exact requirements—for a low initial cost

BINER-ELLISON MACHINERY COMPANY
1101 North Main Street, Los Angeles, California - Phone CApitol 5-8162

in packaging

Weyerhaeuser

(Ware′-hous-er)

is pronounced

Ingenuity

(In-je-nu′-i-ti)

If there were a popular demand for autumn leaves, Weyerhaeuser Ingenuity would package them to give you a selling advantage.

Much more goes into Weyerhaeuser cartons than the contents they protect. Each represents the skills and experience of a large team of packaging specialists. From timber—grown as a crop—to merchandising excellence, every step of production is carefully planned to satisfy and economically meet the needs of each carton user.

Impelling design for high shelf-appeal, plus high-fidelity printing, gives Weyerhaeuser cartons the "quality look" that attracts self-service shoppers. Carton uniformity speeds filling and closing, reduces costly rejects. Shipments-as-promised enable users to maintain efficient production.

Working with Weyerhaeuser is a pleasing experience in carton ingenuity. We invite your challenging problems.

ASK FOR FREE BOOKLET

This informative "Ingenuity" booklet colorfully explains how Weyerhaeuser can service you. It shows not only how Weyerhaeuser works but what Weyerhaeuser will do for you.

Ingenuity

Weyerhaeuser Company

Boxboard and Folding Carton Div.

Headquarters 919N. Michigan Ave., Chicago 11; Ill.

easier; product damage and even such non-packaging considerations as customer safety are much improved (packages do not fall off the shelves—presently a hazard for supermarket shoppers).

3. But supermarket operators will have to analyze even more critically what products sell and in what quantities they sell.

4. They must increase their packaging knowledge if they are to counsel packagers properly on what is wanted and needed. Packaging changes must be effective profitwise for all concerned.

5. Opinions vary on whether tray stocking improves store appearance. Well-tended trays are moderately attractive and will be more so as more packagers add color printing and merchandising messages to container lips. However, retailers agree that empty trays must be removed promptly from the retailers' shelves, or sales are inhibited.

6. Supermarket operators, once they catch the tray-stocking "bug," may tend to go too far too fast. They realize they must act judiciously in their packaging demands.

For *package suppliers:*

1. Corrugated boxmakers may find that the growth of pure tray stocking can counteract the threat of going to paper and paperboard overwraps alone—now looming large for some products. The stores have nothing against overwraps as substitutes for corrugated containers if they give sufficient protection. But neither paper nor paperboard is, as a rule, strong enough for trays and many stores want trays.

2. If pressure mounts for smaller shippers for slow-moving items, total board consumption should increase. For the same total number of products, small boxes take more board than large ones.

3. Boxmakers will probably have to add serrating devices to their cutter-slotters. These cost about $1,500 each and the boxmakers will probably have to absorb the cost themselves. These serraters create a perforated line and provide about the cheapest tray-forming device for packagers other than straight printing. Stores need only a special serrated knife for opening, which is equally as fast to use as is a regular, standard knife and generally less prone to damage the products packaged inside the container. Serrated boxes also give a good-looking lip.

4. Makers of case-loading equipment will probably be called upon to develop attachments for existing equipment, at lowest possible cost, which will adapt present machines to tray-stock requirements. More versatility will be needed in the equipment, with, of course, no decrease in operational speed.

As for the future of tray stocking, such pioneers as the marketing personnel at Kraft—with more than 35 different products now in tray-pack shippers—say that interest is growing in all segments of the food industry. "We know from our talks with both chain and independent people that more and more grocers are either testing tray stocking or contemplating it. So far, there don't seem to be any insurmountable problems connected with the idea and the benefits, of course, are substantial to the grocer directly and to the rest of the food industry indirectly." ●

Cleaning up a package-design backlog

[*Continued from page 108*]

products that was given the Dow Corning new packaging-design treatment is Slipicone, the heat-stable silicone release agent used primarily in the packaging and food-processing industries. Slipicone, using a spray can and tubes, presented the same physical packaging requirements as 4X. The new Slipicone packages feature a free form of deep brown and red on a field of gold and white. The free form on each of the 4X and Slipicone package units includes a miniature symbol that suggests the product's release action or "slip" characteristics.

All of Dow Corning's newly packaged silicone specialties "family" will be featured in advertising and sales-promotional material. These include a special four-color insert (with an actual Sight Savers tissue tipped on) in leading drug-trade publications, a four-color multi-product insert in *TV Guide* magazine, advertising schedules in many other consumer and business publications, and a special Dow Corning silicones promotion scheduled for television this Fall. ●

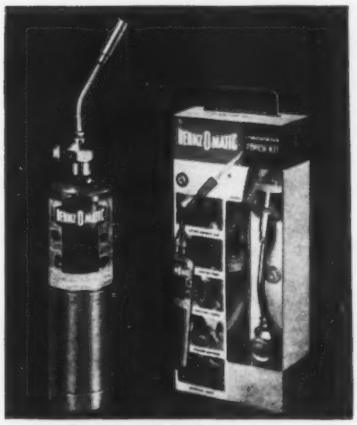
How Weyerhaeuser Ingenuity Helps Sell Bernz-O-Matic Torches in 4 Seconds!

- Boosted Sales 5% to 20%
- Transformed Utility Tools into Gifts

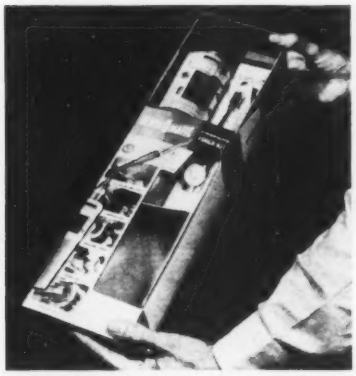
PROBLEM: A point-of-purchase display carton to stop and *sell* busy shoppers of both sexes, all ages (researchers say this must be done in four seconds, or sale is lost)—a salesmanship package that encourages "impulse buying" of Bernz-O-Matic Propane Torches for personal use and as gifts. Otto Bernz Company, Inc. of Rochester, N.Y., found that retailers frequently displayed torch packages lying down, showing only the ends of the cartons, thus minimizing display and losing impulse sales.

ANSWER: This interesting and attractive package, made with acetate panel for product display, a unique "pick-me-up" handle, and lifelike 4-color in-use illustrations, it's such a standout on counter and shelf that Bernz-O-Matic sales jumped 5% to 20%. Robert Zeidman Associates designed the package and recommended Weyerhaeuser be used to adapt the package for economical, trustworthy production. The success of Bernz is typical of how Weyerhaeuser cooperation and ingenuity has paid off for designers and manufacturers alike.

In packaging **Weyerhaeuser** (Ware'-hous-er) is pronounced **Ingenuity** (In-je-nu'-i-ti)



IRRESISTIBLE EYE-APPEAL. Complete torch (fuel cylinder and burner) is instantly visible in this colorful "Carrying case" carton. Price tab is tear-off type, especially desirable for gift sales.



PROTECTION, YET READY ACCESS. Opening of top flaps permits removing inner box to which handle is attached. Also made in larger size with fuel cylinder, burner and an assortment of torch attachments.

WRITE FOR NEW FOLDER. You'll see why cartons for all Bernz products now are being redesigned to obtain maximum torch-sales results.

Weyerhaeuser Company

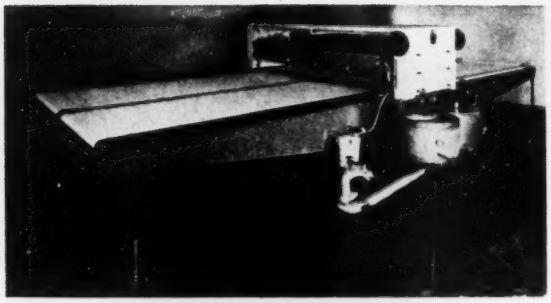
Boxboard and
Folding Carton Division

Headquarters:
919 N. Michigan Ave., Chicago 11, Ill.

NOT THIS

BUT THIS

WITH THIS!



Steinemann

Pressure Curtain Coater

End "valley flooding" and "hill starving" in coating corrugated board. The Steinemann coater avoids the roll coat disadvantages that squeeze material into depressions, and rob elevations. With Steinemann boards move through a uniform, thin curtain of coating which conforms to the surface smoothly—even with scored, slit, and die-cut stock! Color or clear coat, solvent or water-base can be run at speeds up to 800 feet per minute.

Hot Melts, Too!

Tell the difference at a glance by the gloss—it's Steinemann-applied! Waxes, paraffins, polyethylenes aren't roll-squeezed in—same coating weight as with roll coater gives better protection and appearance.

Smaller converters can color, clear and wax coat on one two-head machine. Steinemann costs no more than your present equipment—yet does so much more.

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Send coater details

Max. stock size

Type coatings used

Name

Company

Address

City ..... State .....

Now! Uniform heat for uniform packaging!

New Honeywell VERSA-TRAN*

Precisely controls temperatures to assure a perfect package every time!

Honeywell's new, low cost Versa-Tran is designed to be used in any packaging process where heat must be precisely and uniformly applied. Its low-mass sensing element reacts instantly to the slightest variation in temperature—assures the exact temperature for each packaging operation. You'll speed production, cut rejects, get a perfect package every time!

And this new temperature controller is always ready to go to work. Its unique transistor circuitry needs no warm-up period. It's more flexible, too, because it uses very small, low-voltage wiring.

Other Honeywell Versa-Trans are available to provide precise fill-level control for liquids, accurate humidity control for printing, and close pressure control where the product is weighed on a pressure-sensitive plate or enclosed in a pressurized can.

For details about the Honeywell Versa-Tran that will meet your specific packaging requirements, call your local Honeywell office. Or write Honeywell, Dept. MG-9-36, Minneapolis 8, Minn. In Canada, Honeywell Controls Ltd., Toronto 17, Canada.

*Trademark

Honeywell

First in Control

SINCE 1885

75th YEAR

See us in Sweet's 1960 Product Design File, Section 5b-Min

Polystyrene jar

[*Continued from page 123*]

sions of the new jar are the same as those of its predecessor, the foot has been raised, boosting the height of the container to 2⅝ in. The new foot is tapered in cross section to decrease its weight and is fluted in a fine pattern. The body of the jar is flared at the rim to a diameter of 2⅝ in. and is topped with a flared and fluted cap that not only is decorative, but also reflects the functional character of the container designs.

The cap, also injection molded of medium-impact polystyrene, contains the Long Aid logotype in a stippled medallion pattern in the center which hides the gate mark that would otherwise show because of the thin cross section. This design gives a special custom-mold appearance to the cap, but is formed by a separate plate in the mold, thus enabling the basic cap to be used in the future as a stock item. The cap is lined with a standard, vinyl-coated paper insert that resists permeation or attack by the product.

Since plastic containers with ultra-thin wall sections are more susceptible to permeation by the product during long storage than are heavier ones, this jar was carefully tested with the hair preparation to assure the complete compatibility of the product with the plastic.

Actual shipping savings as a result of the developmental program are substantial. The original glass container, when filled, weighed 66 lbs. per gross. A similar number of the new polystyrene jars weighs only 45 lbs. This represents a saving of 46 cents per gross for the plastic when shipped by freight from Memphis to Chicago and a saving of 67 cents to New York. Keystone also does a considerable mail-order business direct to customers throughout the country, with comparable savings achieved in parcel-post costs.

The continuing achievements in molding and design techniques, coupled with the present downward trend in the price of the basic polystyrene plastic, indicates a bright future for these lightweight containers. And packagers will undoubtedly want to investigate the economies in both container pricing and shipping charges that can be obtained for their products. ●

Marking Ideas for People who Package . . . No. 3

from GOTTSCHO

SEEDSMEN'S SOLUTION

Ferry-Morse Seed Co. packages its lawn seed in a box with a smartly designed gravure-printed cellophane overwrap. However, since contents analysis, testing date and percent of germination are subject to change from time to time, this data is not preprinted. Instead, Ferry-Morse imprints it at the time wrapping is applied—with a "*Series 700 Rolaprinter*" attachment on its Battle Creek wrapping machine. Code and weight also are imprinted simultaneously.

WHAT CODE FOR YOU?

Coding packaged products now is almost universally practiced. But still problems arise as to best kind of code-dating system. While most manufacturers like to use secret codes, their retailer customers often prefer open ones. A middle-of-the-road solution is to use a code that contains numbers in constantly ascending progression. Then, even if stock clerk can't decipher the code, at least he can recognize that the highest number represents the freshest package and shelf-stock accordingly. One simple system is to repre sent the year by its last two digits and the day by its numerical place in the year. Thus, July 29, 1961 would be coded as "61211"—"61" for the year and "211" for the 211th day of the year.

MINUSCULE LABEL CODER

Small enough to hold in the palm of the hand is a new self-powered coding attachment for roll-through labelling machines. "Tom Thumb" dimensions (1¼"x1½"x3¼") of unique "*Series 450 Rolacoder*" makes it

suitable for applications where space is at a premium. Foolproof cycling mechanism registers imprints in any desired spot on wrap-around jars, cans, bottle labels. "Magic Ink Roller" makes up to 500,000 markings without adding ink.

OF PACKAGES AND PRICES

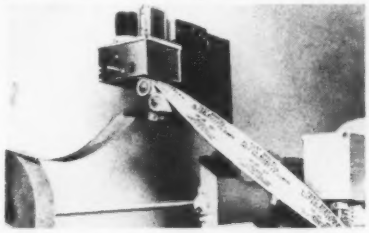
Growing trend of retailers to insist on pre-priced packages is not being overlooked by alert manufacturers and packers. A definite competitive edge is seen for products whose makers relieve retailers of price-marking chores. A new bulletin describing variety of automatic price-marking machines for all types of packages will be helpful to packaging production and marketing men. For a copy check "Price-Marking" below.

ALL THAT GLITTERS

. . . isn't necessarily gold. A new imitation gold leaf—just as inexpensive as colored leaf—now makes it feasible to add rich-looking golden imprints on film, foil, waxed paper bags and wraps. Material comes in 1" x 1000' rolls for use with "*Wrapaprinta*" imprint attachment for wrapping, bag and pouch machines.

MILLER'S METHOD

Most millers sew header tapes with special brand or customers' names on flour bags. Problems include need for carrying big inventories of wide variety of preprinted tapes. But International Milling Company now uses



plain unprinted tape and imprints it with appropriate name as it is used. Tape costs less this way, problem of stocking many different tapes is eliminated. Method also does away with hazard of improper identification, provides opportunity for coding bags as they are packed. A "*Rolaprinter*" attached to bag sewing machine does the trick.

IDENTITY ON UNIT PACKS

It's an age of convenience—with an increasing number of unit portion, single dose and sample quantities of food and drug products going into individual or strip pouches. Convenience for the packager also gets a lift with new automatic attachments for pouch packaging machines that imprint anything from code-date to complete "label" on the pack during the packaging operation. Check "RIN-10/RAP-1" for more details.

HOW TO BUY A CASE-MARKER

When you're in the market for a friction-type marking unit—the kind that imprints shipping cases on conveyor or case-sealer—here are some questions to ask. Does it have a high-capacity direct-inking fountain roller? Simplified automatic registering mechanism? Time-Saving "Metalok" or "Rolaplate" type base? Float-roll inking for uniform imprints? Grip-tread bearers? "*Series 300 Rolacoder*" case-marker includes all these and other important features . . . has the modern streamlined design and clean engineering that distinguish a superior product.

Want more info? Check off — clip — attach to your letterhead — and mail to

GOTTSCHO, Dept. A, Hillside, N. J.

☐ "ROLAPRINTER"® ☐ "450 ROLACODER"
☐ "WRAPAPRINTA"® ☐ "300 ROLACODER"
☐ PRICE-MARKING ☐ "RIN-10/RAP-1"

new treatment gives super high gloss to packages coated with A-C Polyethylene

A new heat treatment using A-C® Polyethylene developed by Semet-Solvay imparts *super* high gloss to waxed paperboard . . . lets you dispense with overwrapping in many cases. It's ideal for frozen food and ice cream packages . . . butter and oleo . . . bread wrappers.

You can use this new technique while realizing all the advantages of A-C Polyethylene wax coatings: greater resistance to grease, moisture, scuffing and abrasion . . . smooth plastic-like feel . . . positive lock at freezing temperatures . . . brighter printing effects.

For details on *super* high gloss with A-C Polyethylene, write us at the address below.

Allied Chemical

SEMET-SOLVAY PETROCHEMICAL DIVISION

Dept. 578-L. 40 Rector Street, New York 6, N. Y.

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The Importance of Logic in Packaging Machine Design.

The most successful packaging machine is the most simple in concept. Unnecessary complexity invariably taxes itself in speed, performance, efficiency and maintenance.

Triangle originally entered the bag making, filling and sealing field to develop a single tube machine. No other consideration was allowed to complicate the basic requirements. That's why Triangle's single tube machine has been so unusually successful.

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NOW TRIANGLE MORE THAN DOUBLES THE ADVANTAGE OF ITS REMARKABLE BAG MAKER, FILLER AND SEALER!

Regardless of whose equipment you're using or whether you're presently considering equipment purchase, you owe it to yourself to investigate the new Triangle Twin machine. The reason? It has all of the advantages, all of the flexibility, all of the efficiency our single tube equipment has without any of the disadvantages common to all other dual tube machines.

Briefly, Here's Why . . .

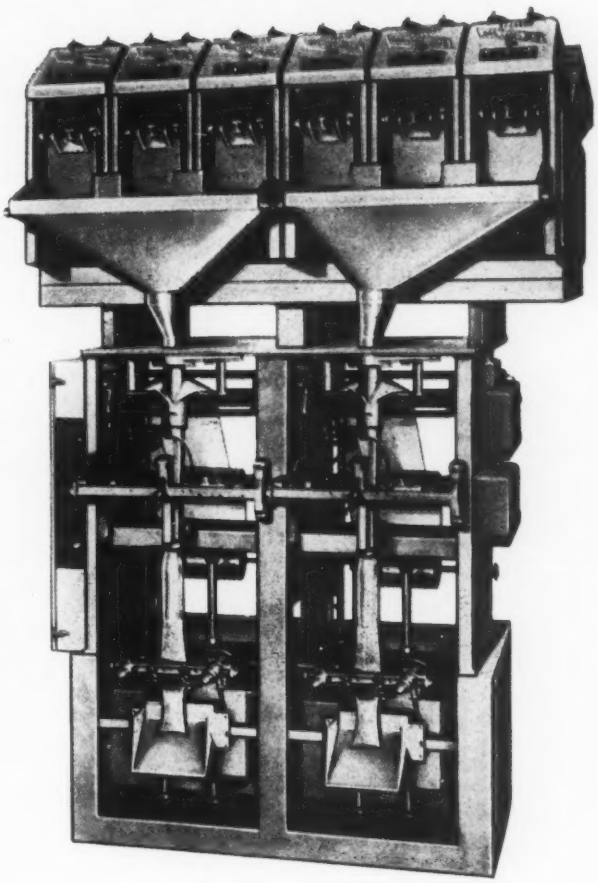
The Triangle Twin is fast . . . 120 bags per minute with any bag material (90 per minute with polyethylene). It will handle a full range of bag sizes up to 8" x 16".

The Triangle Twin is a fully integrated combination of two, efficient single tube machines with one common drive . . . yet sealing jaws operate independently to permit one side to operate while the other side is down for film threading or routine maintenance. This feature results in *less* downtime and more production than normally expected.

The Triangle Twin mounts up to *six* Elec-Tri-Pak net weighing scales on top where they belong. No costly intermediate elevator feed is required. Volumetric filler and other synchronized systems are also available.

The Triangle Twin has all the performance of the time proven single tube bag maker and filler . . . fast, simple changeover for all materials from cellophane to polyethylene . . . quick return jaw assembly . . . simple, functional design of sealing jaws. . .

See for yourself how far the Triangle Twin has advanced the concept of high speed bag making, filling and sealing. Write today—without obligation, of course.



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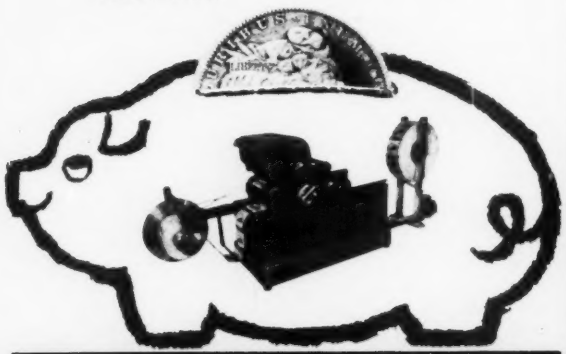

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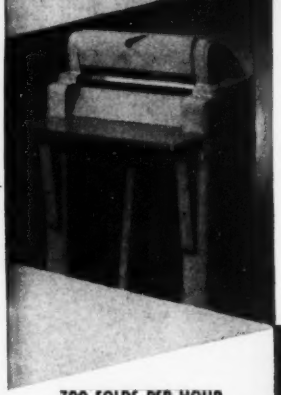
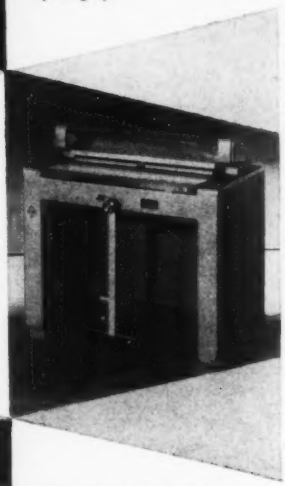


FASTER BLISTER PACKAGING BLISTER-EDGE FOLDER

Performs 180° edge folds at rate of 600 to 1,200 folds per hour on blister packages made from thermoplastic sheet from .003" to .020" in thickness. Heated 18" blade actually molds sheet into desired fold to accommodate slide-in cardboard bottom. No tearing or opening up.

700 FOLDS PER HOUR FOLDER-CREASER

This dual-purpose 30" sheet plastic fabricator gives you the advantages of TWO machines at ONE price. The Folder-Creaser handles sheets .003" to .020" Folds minimum of 700 per hour at 180° and "instant creases" 90° angles at minimum of 1,200 per hour without rejects, tearing or opening up.



BEAD 2 EDGES AT ONCE DUAL-EDGE BEADER

Simultaneously beads both edges of plastic sheet, roll, die cut blanks and strips, .005" to .020" thickness, 2" to 20" wide. Nine different beads and Specials! High speed production! 500" to 1,000" per MINUTE. Each head can be used independently as a single edge beader if desired.

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This IMCO double-walled jar is made of new linear polyethylene. It is an unlined jar which is impermeable enough to hold most cream products. It is molded to match the dimensions and capacity of standard flint and opal jars... yet it is five times lighter than flint, lighter still than opal. □ It represents a major breakthrough because it makes the tremendous flexibility of linear polyethylene and polypropylene available to the cream products industry. You can have color, all the color you want, any shade, any variation. At the same time, you can virtually eliminate loss by breakage and save countless shipping dollars. □ If you'd like to test your cream product in this new jar, call your nearest IMCO representative or write IMCO, 75th and Cleveland, Kansas City, Missouri. □

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Drawing a quality line

[*Continued from page 119*]

enough, yet can be easily broken without tearing the paperboard. Although it will not reseal, it can be closed with a strip of pressure-sensitive film tape. The polyethylene bags are pressure-tape closed at one end of the container and this tape can be resealed.

General informative copy on both folders and bags is printed by the package suppliers. However, copy indicating size, color, length, denier, etc., is imprinted at the hosiery mill. The maker of Sears' standard imprinting equipment has developed a new "adapter kit" which is said to allow existing equipment to imprint the polyethylene bags with the same quality and at almost the same speed as the paperboard folders. This adapter kit is not yet generally available and the supplier will not permit a full description of it. But Sears' experience so far is said to have been so good that the supplier may offer the equipment for sale after further use.

Another mechanical advance is a semi-automatic machine for closing and gluing the folder flaps. Reportedly, no one, including Sears, has yet succeeded in completely automating women's-hosiery packaging. However, once the hosiery has been hand inserted into the folders, Sears' new flap-closing and sealing machine can turn out 30 completed packages per minute. The machine uses a special fast-setting, synthetic resin adhesive.

The operator places a filled folder on a machine plate sideways, with flaps on either side. The weight of the folder kicks a microswitch, which activates the machine. The package is conveyed by chain-mounted lugs over the glue rolls and through the plow mechanism into a compression chamber, where rubber bars on either side apply heavy pressure. A light-pressure plate in the center prevents buckling. The next package starts a new cycle which expels the finished package onto a pair of horizontal canvas belts which, acting as a take-away conveyor, keep the package under light pressure between them along their 6-ft. length. This device allowed Sears to reduce the cycle in the main compression chamber substantially. ●

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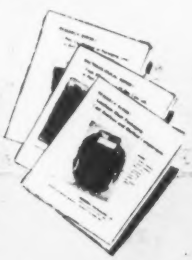
Shelf life is increased, customer acceptance goes up and spoilage costs go down.

Take advantage of Modern Packaging's experience, technical achievement and advanced quality control facilities. **Write today** for Modern Packaging's interesting and informative literature. It's designed to help select the process that's best for you!



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TAPE IMPROVES KODAK LABELING... PUTS SMILE IN COST PICTURE, TOO

Labeling time reduced . . . labeling costs reduced . . . neater, more eye-appealing packages . . . faster delivery service.

This is the new picture that developed at Eastman Kodak's color film processing laboratory, Fair Lawn, New Jersey, since they switched to "SCOTCH" BRAND "PAKLON" Film Tape No. 681 on their labeling operation. On at a touch, "PAKLON" Film Tape eliminated a slower, glue-pot method of labeling.

Dispensed in 3-inch strips from a specially designed "SCOTCH" BRAND Tape Dispenser, tough, transparent, "PAKLON" Film Tape covers the entire mailing label. Holds it fast so it won't fall off or tear loose. Protects printing from scuff marks, dirt, moisture—keeps label clean and easy to read—resists temperature changes—speeds package to its destination.

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What do you mail? Perhaps the tape technique proved so successful at Eastman Kodak can save you money too. Your 3M Representative will be glad to advise and assist you in exploring this and other uses for "SCOTCH" Tapes. Ask your nearest "SCOTCH" BRAND Tape Distributor for details or write: 3M Co., Dept. IAJ-90, 900 Bush Ave., St. Paul 6, Minn.

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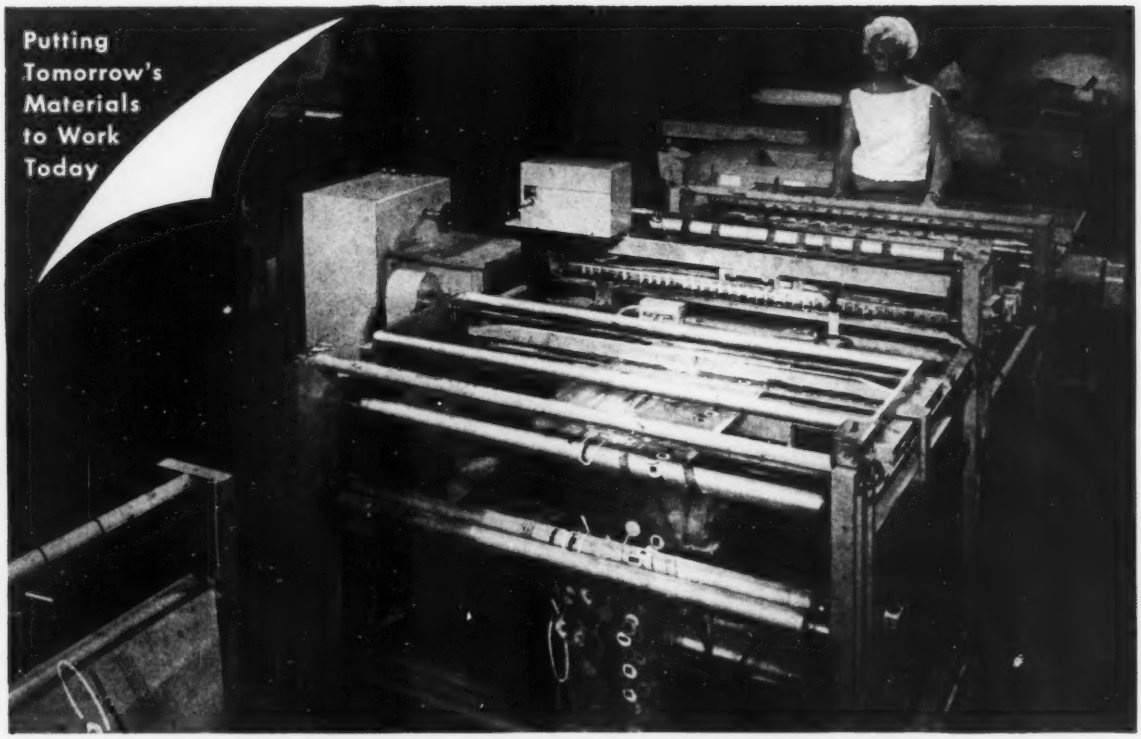

SCHJELDAHL BAG-MAKING MACHINE PHOTOGRAPHED AT MASTER PACKAGING INCORPORATED, TAMPA, FLORIDA

"Our Schjeldahl machine has kept down-time to an absolute minimum"

"During the two years our Schjeldahl Model S-16 has been in operation, we have realized production of the highest quality," says Richard M. Turkel, General Manager of Master Packaging Incorporated. "We have also been able to maintain very efficient production speeds with what we consider an absolute minimum of down-time."

Schjeldahl machines run bags from 3" x 3" to 40" x 70". Use any film thickness from ¾ mil to 4 mil. "Split roll" machines let you run up to 120 cycles per minute, producing 4 printed bags with each cycle . . . in any shape, with sideweld or bottom seal. A Schjeldahl gives you the greatest production capacity and versatility of all. And use-tested design keeps down-time at a minimum.

Put a profit-making Schjeldahl machine to work for you. Write, wire or call for the facts on Schjeldahl bag-making machines and the complete line of attachments and accessories.

SAVE LABOR with the Jog Index Tray attachment. Operate machine at full speed and handle output easily. Builds shingled stacks of 10, 25 or 50 bags. Like all Schjeldahl attachments, it fits any Schjeldahl bag-making machine.

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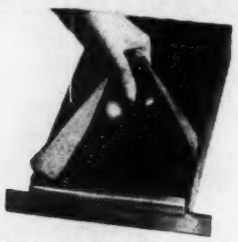

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SPI lists plastics cleared by F&DA

Definite clearance of virtually all plastic resins used in food packaging—with the exception of polyethylene—has been announced by The Society of the Plastics Industry, based on a letter received from the Food & Drug Administration recognizing as "prior sanction" a 1956 listing of these materials by the F&DA's Dr. Arnold Lehman. Use of polyethylene continues under extension and, according to SPI, the letter indicates that there should be no difficulty in clearing polyethylene prior to the March 6, 1961, deadline set by the 1958 Food Additives Amendment. Copies of the list of sanctioned plastics may be obtained on request to the SPI, 250 Park Ave., New York 17. ●

Investigation of cushioning materials

[*Continued from page 152*]

Such curves can be derived with the dynamic compression-testing equipment described earlier.

Additionally, acceleration-static stress curves can be evolved from cushion factor-stress curves. As cited above, this may be the case if it is found that use of a particular cushion factor-stress curve is not feasible. Then, a series of points can be selected along the cushion factor-stress curve in question and for each point, the peak acceleration, Gm, can be determined from equation (4) and the static stress, $\frac{W}{A}$, derived from equation (1). The complete acceleration-static stress curve can then be plotted with the series of coordinates thus obtained.

Having available acceleration-static stress curves, where applicable, the designer can—as with a cushion factor-dynamic stress plot—select the approximate amount of cushioning material to protect an item. Knowledge of the weight, bearing area and fragility of the item to be packaged, as well as economic and other factors, will similarly permit selection of the most satisfactory type of cushion.

Future work

In addition to the program that is currently under way, there are other phases of the investigation of cushioning material that will be undertaken at Picatinny Arsenal. Among them are:

A. Determination of the "fatigue factor" of cushions. That is, a study of the effect of repeated impacts on cushions, since it is known that in many cases cushioning ability decreases with repeated shocks.

B. Determination of the "container effect" on confined cushions in dynamic compression testing. It is anticipated that this will be accomplished by changing from the steel-exterior test container prescribed to test containers fabricated of aluminum, plastic, wood, fibreboard, etc. Also, by varying the present steel dropping surface to impacting surfaces made of concrete, wood, dirt, sand, turf, etc.

C. Determination of the effect of temperature extremes (minus 65 deg. F. and 160 deg. F.) on the test container, plus confined cushions, during dynamic compression tests, since it is known that some cushioning materials—especially some plastic foams—degrade appreciably at elevated temperatures and lose resilience below minus 35 deg. F.

The use of information gleaned from Picatinny's investigation of cushioning materials in determining packaged-material requirements will enhance the attainment of optimum end-item protection with a minimum of weight, cube and cost.

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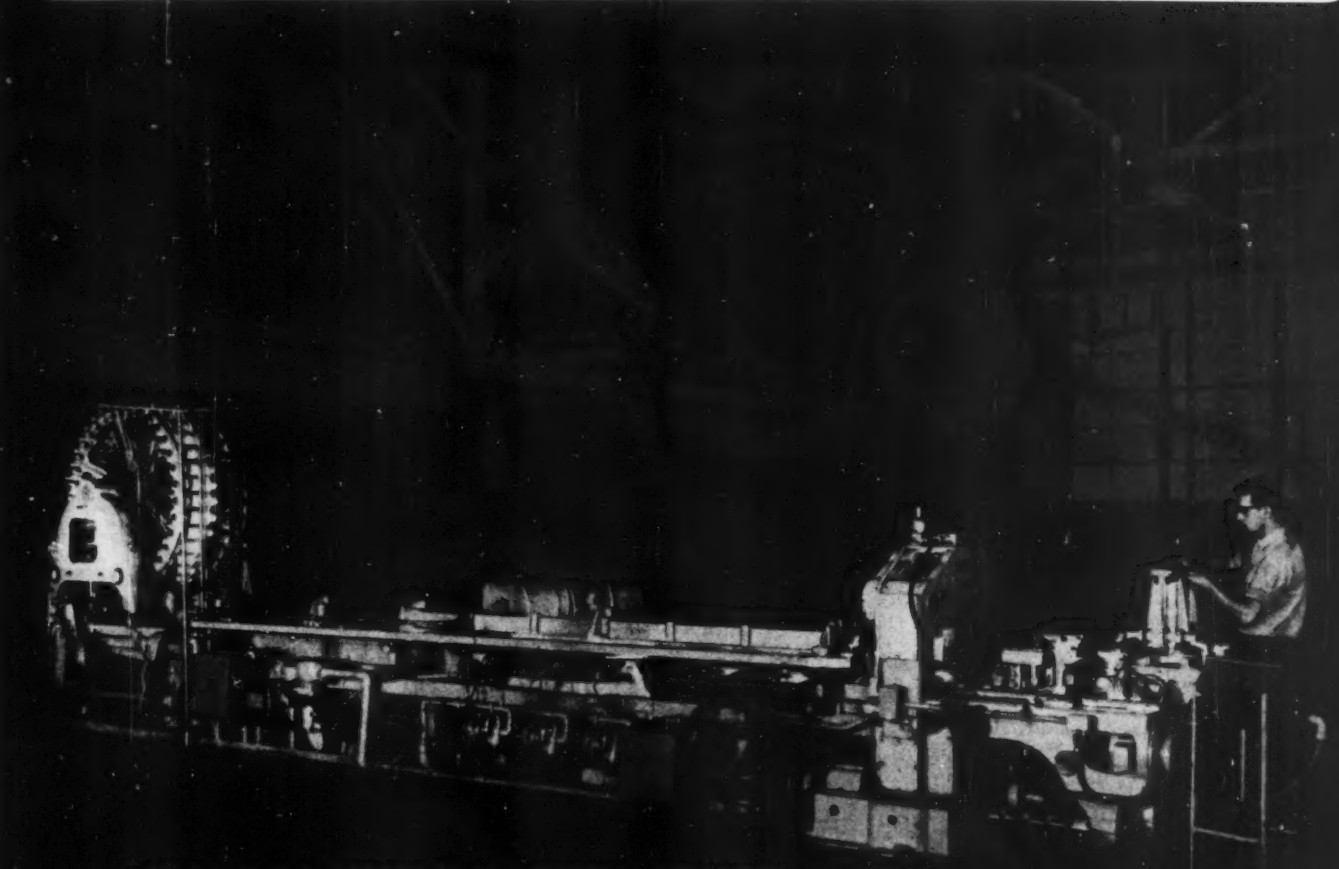

On this can line, tested at Bliss' Hastings, Michigan plant, blanks are transferred from the slitter to the new Bliss 603 Universal bodymaker. From here, the finished bodies are automatically transferred through flanging, seaming and testing – all at speeds up to 450 per minute.

BLISS MAKES 2 MILLION CANS IN NOVEL TEST OF CAN LINE

For a few weeks last fall, E. W. Bliss Company was in the can-making business. When Bliss finished building the first of six complete can lines, they thoroughly tested the line by producing 2,000,000 cans in their own plant at Hastings, Mich.

Almost completely automatic in operation, the line produced the finished, tested cans at speeds up to 450 per minute.

Key unit is the new Bliss 603 Universal Bodymaker, shown above. The 603 makes a wider assortment of can sizes than any other bodymaker; can turn out bodies as large as 6-3/16" diameter and 5-9/16" high. The substitution of standard change parts enables it to make bodies 7-13/16" high! This remarkable versatility makes the 603 ideal for packers who use many different can sizes.

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HORIX FILLING MACHINE with at least 18 valves. 9/16" diameter filling valves to accommodate 28 M/M finish on quart and pint. Also, 7/16" diameter filling valves for an abrasive polish are desired if available. Must be in good condition. C. P. Baker & Co., 501 N. 11th St., Phila. 23, Pa.

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NEED: BUTYRATE AND ACETATE SCRAP Sheet Trim, Purgings, Reground. Claude P. Bamberger, Inc., Ridgefield Park, N. J., HUbbard 9-5330.

DESPERATELY NEEDED: ACETATE AND BUTYRATE sheet scrap. Also, buy all other thermoplastics. Write, Wire or Phone—collect: Philip Shuman & Sons, 571 Howard St., Buffalo 6, New York—tel: MA 3111.

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MECHANICAL OR PACKAGE ENGINEER with automatic can handling experience is needed by a progressive, expanding, manufacturer of metal containers. Should be able to take charge of product development department. Knowledge of metals and internal coatings helpful. Good opportunity. Please reply Box 1288, Modern Packaging.

PACKAGING DESIGN ENGINEER—Looking for top notch engineer experienced in the design of packaging equipment. Must have proven ability as a designer. Experience in the design of Cartoning Equipment desirable, but not necessary. Company is located in midwest and is an acknowledged leader in its field. Inquiries held in strict confidence. Write qualifications to Box 1289, Modern Packaging.

EXPERIENCED POLYETHYLENE EXTRUSION COATER OPERATOR: is needed by well known midwestern converter of flexible packaging materials who is expanding and ordering an extrusion coater. The company needs an experienced operator to advise, set-up, operate, and train personnel in new department. There are excellent advancement opportunities for an ambitious and capable man. Address replies, listing experience and pertinent information to Box 1295, Modern Packaging, 575 Madison Ave., New York 22, New York.

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NATIONAL SALES MANAGER and Organizer—Strong converter and specialty products experience establishing national sales organization—seeks executive sales position films, foils, papers, laminations, semi-rigid containers, allied fields—new or established product lines. Box 1293, Modern Packaging.

PACKAGING SALES REPRESENTATIVE: Mature young man, good appearance, college graduate, top of class, with successful advertising sales record on leading trade publication. Familiar with retail marketing problems and able to meet and discuss issues with people of high caliber, desires opportunity to show what can be done through "hard work" and imagination. Reply Box 1296, Modern Packaging.

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RISDON HANDI-MIST

Compact, *non-refillable* dispenser equipped with metering valves and polished brass or aluminum spray domes.

For Purse, Table or Travel . . . in a Variety of Beautiful Finishes . . . Equipped with Risdon Quality Valves to Insure Customer-Keeping Performance . . . Dispensing Perfumes, Pharmaceuticals and other products.

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Refillable container with metered or non-metered spray valves in one ounce and two ounce stock sizes.

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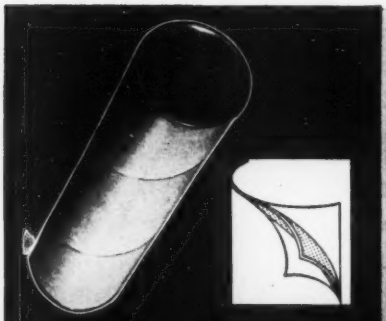

LARDPAK* LINER.
Lardpak liner inside; then fibre, and printed Lardpak paper used outside. A grease barrier for scores of materials. Example of use: caulking compounds.

LARDPAK*, PITCH-BACKED.
This combination offers the packer both grease and moisture resistance. Example of use: various chemicals.

• There are many sides

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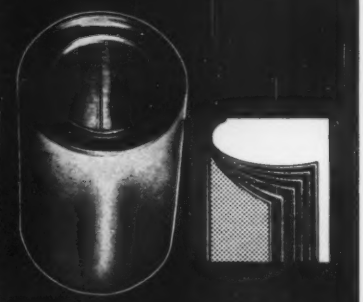

CHIP KB.
* Pitch layers between layers of fibre, for moisture resistance. Convolute can shown here. Example of use: wallpaper cleaner, cold water paints.

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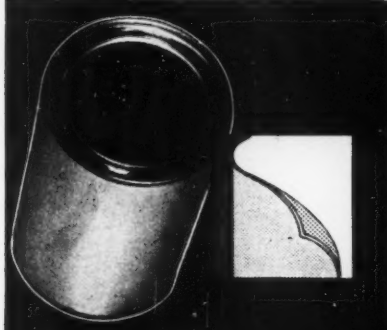
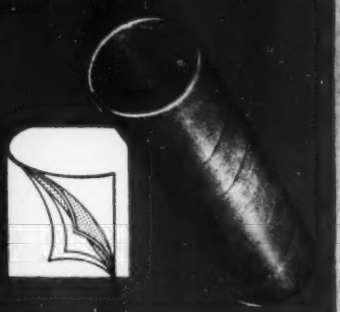
Contact your nearest R. C. Sales Office for experienced advice. There's no obligation.



PARAFFIN COATING.
Parrafin lining obtained two ways: spiral wound from coated fibre, or sprayed in convolute can. Example of use: moth crystals, drugs, etc.



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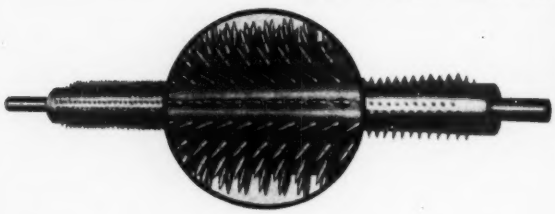

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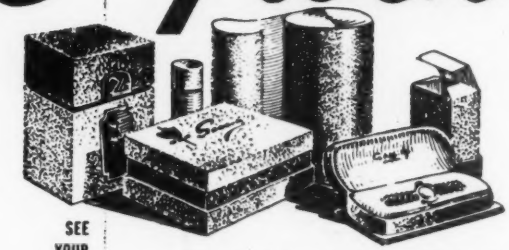

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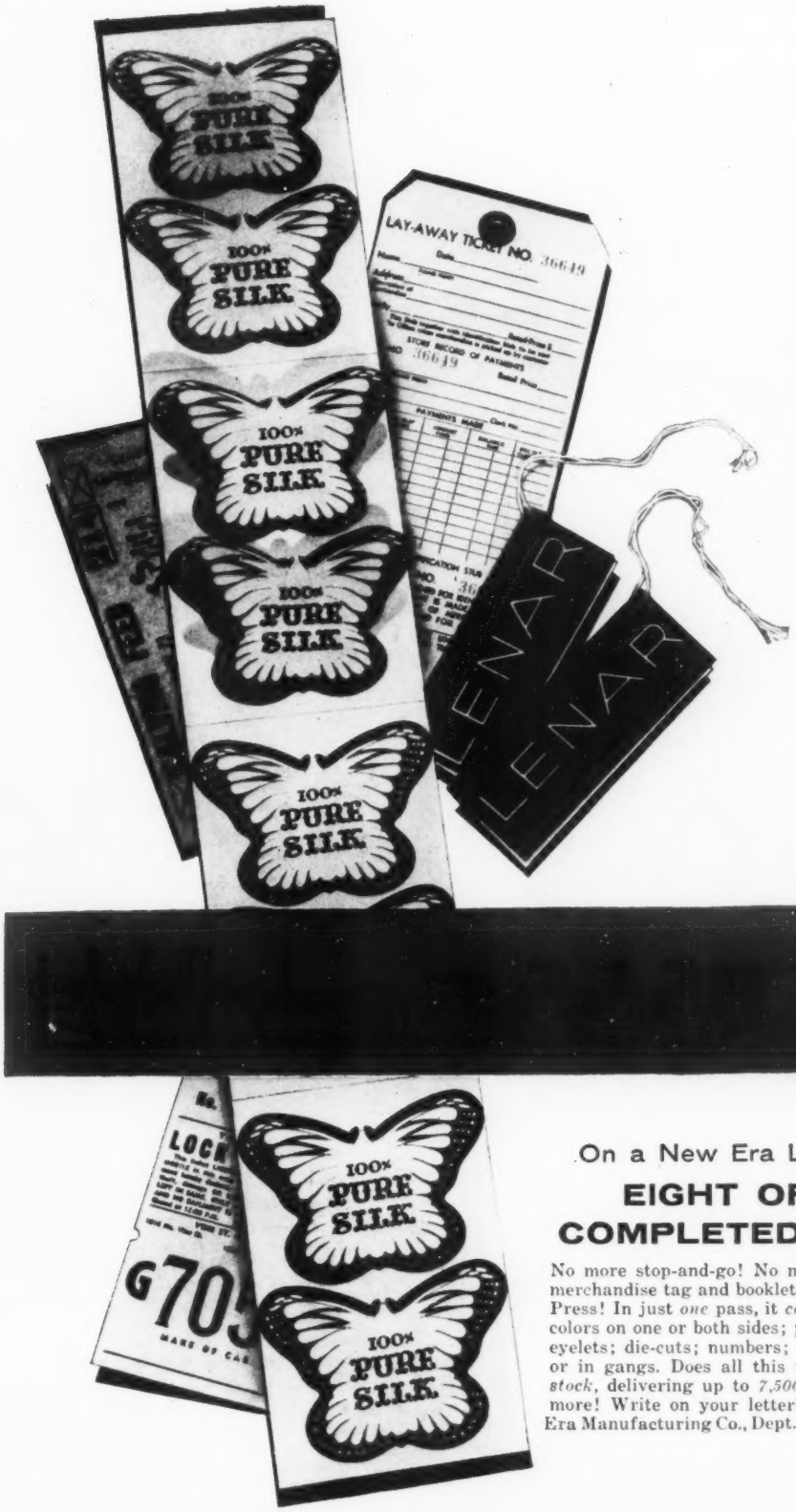

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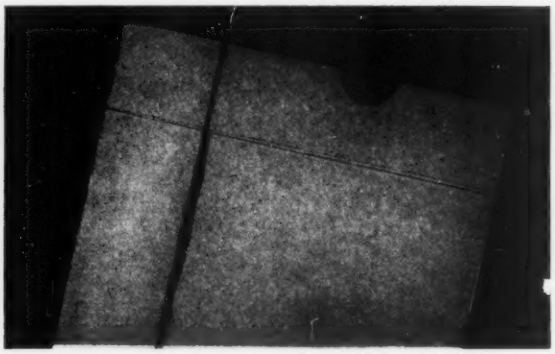

2. THE ADHESIVE SQUEEZES OUT — This unsightly mess also carries a troublesome side-reaction: the adhesive can accumulate on the pressure belt, marring your boxes and spoiling your printing. Could be you're simply applying too much adhesive. Or, you may need a *faster-drying* adhesive. Or, one of different viscosity. As another possibility, the adhesive may be building up on the rollers or transfer mechanisms. Why delay? See the Arabol man.

3. THE ADHESIVE THROWS — When this happens, your boxes stick together (and *t-e-a-r* apart) or glue spots appear on the surfaces. The culprit is usually glue viscosity; it's either too high or too low initially. Or running your machine at high speeds may have changed it. You'll probably need an adjustment in the adhesive formulation. Talk it over with the Arabol man. He'll see that our laboratories understand the problem fully—and solve it neatly.

4. THE FINISHED BOX POPS OPEN — This can be costly, because it usually happens when the box is on the customer's shelf. We can suggest at least four possible reasons: (1) unusually high or low humidity; (2) ditto with high or low temperatures; (3) pressure of stacked boxes is causing cold flow; or (4) a chemical reaction is taking place between the adhesive and the contents of the box. Solution? Turn the problem over to the Arabol man.

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